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VIEW OF PART OF PHILADELPHIA MODEL, SHOWING TREES, RIVER AND BUILDINGS

CONSTRUCTION OF MODELS

Buildings Cut from Wood Blocks, or of Card Board—Sponges, Wool Shavings and Felt to Represent Trees, Shrubs and Lawns—Cigar Ashes, Glass, Beads and Wire Used—
Reproducing Surface Topography

THE practice of informing the taxpayers as fully as possible concerning contemplated plans in connection with all public enterprises is becoming more common, and commendably so. Partly as the cause and partly as the result of this, the average citizen is becoming more proficient in understanding both reports and drawings. It still remains true, however, that not only the average citizen but even the engineer or architect himself can more fully appreciate the appearance of proposed buildings, layouts of parks, etc., from a model made accurately to scale than from the best of plans. The best example of

such models which we have seen was the exhibit in connection with the Conference on City Planning, in Philadelphia, described in our issue of May 24. It seems to us that city officials in charge of or interested in the adoption of plans for public improvements might well make freer use of models than heretofore has been the practice. For this reason we offer a few suggestions as to how these may be prepared.

The most elaborate and realistic model at the exhibit referred to, and what is said to be the most complete ever constructed, was one of the proposed parkway in Philadelphia, a photo-

graph of which was presented in connection with our article above referred to. The parkway plan from which the model was made was designed by William E. Groben, architect of the Department of Public Works of that city. The model was constructed from these plans and under the architect's personal supervision, 20 skillful modelers, colorists, and expert Swiss wood carvers especially selected for this work being employed upon it.

The base or platform of the model is about $3\frac{1}{2}$ inches in thickness and was made in three layers, each with the grain of the wood running in a direction different from the others to avoid cracks and warping. The central layer is cored, i. e., the wood was laid in very thin strips and firmly glued together. Because of its great length and to permit of its being transported, the base, which is 30 feet long, was made in three sections, dowelled together. The natural grade or slope of the ground was obtained by planing down and carving the upper layer. The streets between the curbs were also cut out $1/16$ -inch deep to give the effect of roadways.

The buildings are solid wooden blocks cut accurately to the general shape of the buildings. On these blocks were pasted drawings representing the several faces of the building, showing windows, the joints of the masonry, etc.

To overcome the flat appearance in the ordinary cardboard model, moldings were applied to the buildings after the drawings had been pasted on the blocks, and were painted to represent cornices and band courses. These moldings throw the proper shadows and give a wonderfully realistic appearance to the model. The ornamentation of the buildings was made by pen or color on the drawings. Free-standing columns were made of wood carved or turned on a lathe. The capitals and bases were modeled out of composition. Pylons, monuments, statues and fountains were delicately carved from hazel wood by the Swiss workmen.

A very realistic touch was given to the model by the reproduction of the trees and other foliage along the streets and in the parks. Trees were made from small pieces of sponge cut to shape, dipped in green dye and fixed on nails. Bushes and branched trees were made by sticking the sponges on pieces of flexible wire instead of nails. Occasionally scraps of tree fern from the florist were used to make dense park foliage. Grass was simulated by "flock" or wool shavings thrown on wet green paint. Flowers were sponges tinted various colors by dipping in dyes. Hedges were tiny strips of green felt glued in place.

Rocks and stones were made of bits of jagged wood tinted to proper color with gray paint and crusted with cigar ashes. Hills were formed by applying the wooden blocks to the base and carving them out to the required slope and height. The Schuylkill river was gelatine tinted with water color and applied in a very thin coat to avoid cracking. The effect was so realistic as to actually cast the reflections of the buildings along its banks. Glass was inserted in basins and fountains to represent water, and blown glass for jets of water. Roadways were painted to represent asphalt or macadam. By this scheme the true natural colors were represented, which is impossible on plaster or cardboard models. The marble mosaic pavements in the court yards and entrances of buildings were made by painting them first on paper and then pasting on a wooden base. A street light was made of a glass bead on the top of a wire; of a single lamp, bent at the top, to represent a shepherd's crook standard. Where there were two or more lights a corresponding number of pieces of finer wire were twisted together for the column, the individual wires branching out at the top for arms.

Along the river were imposing parapets, balustrades and retaining walls, carved out of wood and painted to represent stone and marble. The city hall and other existing buildings were constructed with the aid of the original plans, or by measurements and photographs taken on the spot.

This model attracted so much attention from those who visited the exhibit that numerous requests have been made that

it be sent to other cities in the United States, and it is expected that this will be done during the coming year. As stated above, the base is made in three sections easily disconnected. The buildings are held in place by screws from the underside of the base, these being inserted in fairly deep auger holes in order to reduce the length of screw required. The buildings can therefore be readily removed and packed in sawdust for shipment, or if the model is to be stored at any time.

Other models at the exhibit illustrated somewhat different methods of construction. For instance, buildings made to large scale were constructed of heavy Bristol board, all features of minor relief being represented by shaded lines and shadows; the balconies, gables and the like being actually reproduced in thinner Bristol board. In place of wool shavings, grass was represented in some of these by green felt. Where glass is used to represent lakes or other bodies of water, blue paper placed beneath it greatly heightens the illusion.

For representing topography of ground surfaces where this is irregular and where cross section lines have been run or contour maps plotted, there are two convenient methods of using the data. Where the elevations have been taken, and the ground can be most conveniently represented, by a series of lines at right angles to the general trend of the contours, cross sections at frequent intervals can be drawn on stiff cardboard, accurately cut out with a sharp knife, and these cardboard strips mounted erect upon a stiff base at the proper intervals. The spaces between the strips can then be filled in with plaster of Paris, cement, papier mache, pottery clay, putty or other materials which are easily worked and convenient to obtain, and shaped, using the top edges of the cardboard strips as a guide.

The other method is especially applicable to situations where the contours are more or less circular or oval, rather than following the one general direction, as where the ground is covered with hills, knolls, etc. In this case each contour line is copied on to a piece of cardboard by means of transfer paper, and the included area cut out carefully with a sharp knife. At the same time that the outline contour is drawn the next higher contour is also transferred to the cardboard in order to indicate the exact position for placing the cardboard which represents this contour. These pieces of cardboard, when cut out, are pasted one above the other, the proper position of each on the next lower being indicated as just stated. The contour intervals and thickness of the cardboard should be adjusted to give the proper scale. It is difficult to cut with the knife cardboard more than $1/20$ of an inch thick, and $1/30$ to $1/40$ is perhaps the most convenient thickness to work with. Thick mucilage or thin glue we have found to be preferable to paste. This leaves the model of the ground surface in a series of steps. The angles between these can be filled by the use of putty, "plastacene," potters' clay or a similar substance. Plaster of Paris has the fault of setting too quickly unless made very thin, in which case it is apt to soften the glue between the cards and generally disintegrate the model by moisture. Neat Portland cement also might be used for the same purpose.

For coloring, ordinary paint can be used on the putty, or putty or plastacene already colored to the desired shade can be used. Plaster of Paris can be treated with a sizing and painted similar to a plaster wall. Portland cement will not hold ordinary paint, but paints are sold designed especially for adhering to cement.

Next to models, probably a good bird's-eye-view sketch is most satisfactory in informing the average citizen concerning proposed improvements or existing ones. One instance of this was shown by the illustration of the Poughkeepsie water works plant, reproduced in our issue of March 24, 1909; another by the plan for a park and playground at Somerville, Mass., on another page of this issue. Such bird's-eye views require considerable artistic ability, while the models, although generally taking more time, can be prepared by anyone with a little care and patience, and it seems to us are more satisfactory.

EXHIBIT BY SEWERAGE COMMISSION

FOLLOWING the Budget Exhibit of a few months ago, a public commission of New York City—the Metropolitan Sewerage Commission—has recently been endeavoring to inform the people concerning the aims of and results obtained by the commission, through the medium of an exhibit of charts, models, photographs, etc., placed in the Metropolitan Museum of Natural History. The largest part of this exhibit comprised photographs showing various pollutions of New York harbor, the boats and appliances used by the commission in its investigations, and finally photographs and plans of sewerage systems in a number of cities. Interspersed among these were a number of placards bearing phrases which were intended to catch the eye and interest almost any citizen. One of these contained a photograph of the Flatiron building, twenty stories high, accompanied by the statement, "The sewage produced in the Metropolitan district would fill this building every 43 minutes." Among the other placards were the following:

There are over 500 sewer outlets discharging into New York harbor.

Either the sewage or the public should be kept out of the water.

The water is black and effervescing with sewage in

Gowanus Canal,
Newtown Creek,
Bronx River,
Harlem River,
Passaic River

and along many of the docks and piers of the New York water front.

Why not pump the sewage to sea?—The cost would be excessive.

Why not utilize the sewage on farm land?—There is not enough land within reasonable distance of New York.

Why not extract the manurial ingredients?—Experience shows that it costs more to extract them than they are worth.

The sewage treatment plants which were illustrated included those at Paris, Berlin, Dublin, Hamburg, Essen, Frankfurt, Amsterdam, Birmingham, Salford, Glasgow, Leeds, London and Manchester in England, and Worcester, Mass.; Columbus, Ohio; Providence, R. I.; Baltimore, Md., and Saratoga Springs, N. Y.

Probably the most striking part of the exhibit was one which was not strictly a part of the exhibit of this commission, but comprised models prepared by the model-making department of the museum and which will remain as permanent exhibits. Among these were models of the Plainfield, N. J., contact beds, together with two boxes containing samples of the stone used in them.

A grit chamber, a fine revolving screen and a coarse bar screen.

A deep sedimentation tank (like that at Toronto), rectangular sedimentation tank with scum boards, etc., and an Emscher tank.

Bleaching powder disinfecting plant.

Columbus sprinkling filters and samples of Taylor and Columbus sprinkler heads.

Gathering drift wood at the Battery and oysters in Jamaica Bay (both presumably polluted by sewage).

Bathing at Corlear's Hook, showing sewage flowing into the river from a sewer immediately above the bath house, and from there, but little diluted, into the bath house itself.

In making these models advantage was taken of the experience of the expert model makers in the use of plaster, composition similar to papier-mâché, wood, etc. Quite effective in the last-named model was the use of glass having an uneven surface to represent rippling water, this being painted on the underside a greenish-blue to represent the comparatively clear river water and a yellowish-brown to represent the sewage.

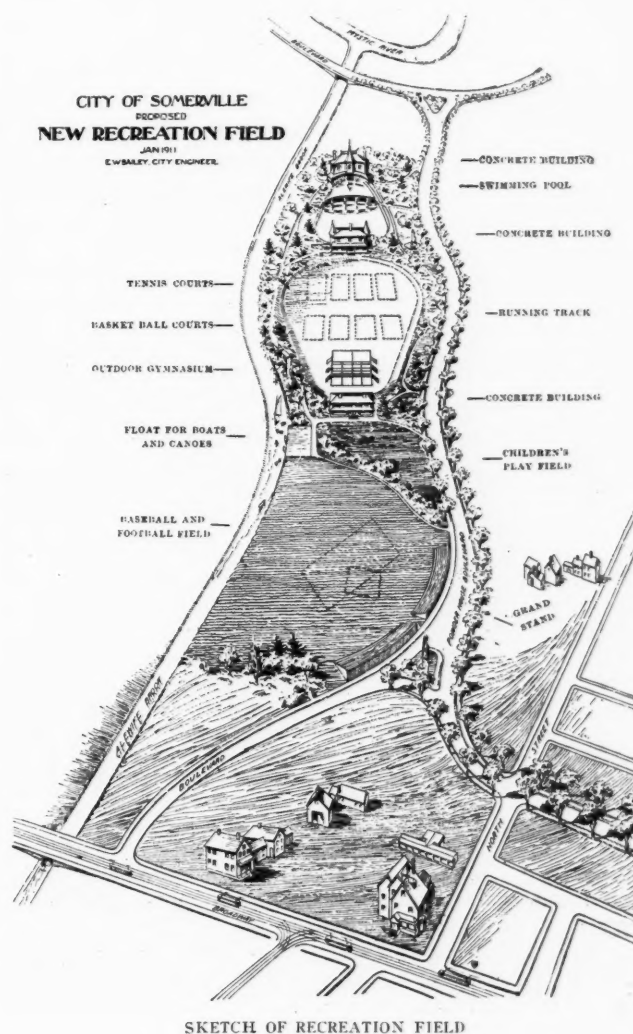
The Department of Sewers of the city also contributed to the

exhibition a number of photographs and drawings showing sewers and sewer outlets, catch basins and other appurtenances.

Altogether the exhibit gave the average citizen who visited it an excellent idea of the conditions in New York harbor as to pollution of water by sewage, the method of investigation carried on by the commission and the opinions and decisions reached by the commissioners. The citizen who seldom visits the water front was thus given an idea of conditions there, although the idea was by no means complete, as photographs failed to show the greasy scum, the opaque turbidity and the odors which are found not only at most of the sewer outlets but in some cases for a long distance below them. Probably the residents of New York most familiar with these conditions are the boys who are found bathing by the hundreds in this foul water, but these have no vote and little influence upon the public administration in any way.

SOMERVILLE PLAYGROUNDS

THE designing, construction and maintenance of parks and playgrounds of Somerville, Mass., form a part of the duties of the engineering department of that city of about 80,000 population. In his report for the year 1910, City Engineer Ernest W. Bailey states that there are at present twenty separate parcels of land used for parks and playgrounds, with a total area of 67.9 acres, in addition to a boulevard about 1 1/3 miles long. The original cost of the land included in these was \$368,591.13. The first cost of construction was \$246,298.73, to which there has been added at intervals additional construction amounting to \$54,139.94. The city maintains under its supervision seven baseball fields, three football fields and minor smaller playgrounds containing outdoor gymnasiums, running



tracks, tennis courts, etc. in this respect the city believes it is in advance of most cities, but that this is necessary because of the density of population, which averages 18,500 to the square mile for its entire area. In several of the parks are field houses, which are heated, lighted and equipped with rest and toilet rooms. The ball fields are constantly in use by athletic teams, and about 300 games were arranged for and regularly scheduled last year. The entire expenditure for the year was \$13,828 for parks, cemeteries, boulevard and parkway roads, of which \$4,008.13 was for playgrounds and recreation. This expense was met by a city appropriation of \$11,800, \$267 from the High School Athletic Association, \$100 from the elevated railway company for partial maintenance of parkway, \$1,050 from the public grounds appropriation, \$150 from the Playgrounds' Association, and miscellaneous items for material and labor furnished by other departments made up the balance.

"Considering the popularity and general feeling of the public in regard to athletics and outdoor exercise in general, as shown in our own city in the last ten years' time, the question arises of the city's having at least one large permanently located field for such a purpose. A plan has been made recently, showing the layout of a new proposed field located in the northwestern section of the city, including an area of about 16 acres. This proposed field, when completed, would be the finest recreation ground owned by any city, and would include areas for baseball, football, basketball, tennis, croquet, play field for children, outdoor gymnasium, running track, swimming pool and boating and skating on the brook, a concrete grandstand and field houses equipped with shower baths, lavatories, dressing rooms, lockers, etc., and could be constructed in a term of years as the city finances would allow." Already about five acres of this area have been acquired and graded.

FERTILIZER FROM CITY REFUSE

A REPORT of a U. S. Consul, quoted in our issue of April 12, referred to a machine for crushing city refuse and preparing the same for use as fertilizer, and it was described in the May 10 issue. Since this was published we have obtained further information concerning this process. Arthur Harrison, borough engineer and surveyor of Southwark, London, stated, under date of May 27, 1911, that there is at present in use in that borough three machines of this kind, each running 54 hours per week and dealing with a daily quantity which is ordinarily between 60 and 70 tons. The refuse treated is the ordinary house-bin refuse and trade refuse. The loads are brought into the depot and dumped in front of the machines, to which they are fed by hand. During the process of feeding, the men throw out tin cans, iron, large rags, mats, oil-cloth, baskets, etc. The rags and other inflammable material are burned in a furnace and the metals are sold. The prices obtained at present for the metals are as follows: Tin cans, \$5.22 a ton; all kinds of light iron and wire, \$5.46; galvanized iron, \$3.15; enameled iron, \$2.45 per ton. These sums are received for material delivered at the works. Two of these machines were installed in 1906 and the third in 1908. The machines cost \$2,425 each; and the shafting and conveyors and electric motors, steel work and buildings brought the total cost for the three up to \$20,230.

The material fed into these machines is pulverized and the product is sold to farmers, who find it useful on stiff or clay soils. Naturally they make the most use of it in the spring and very little during the growing season, during which time it is stored at various places in the country, whence the farmers remove it during the winter months. Up to March 31 of this year the farmers had purchased 39,502 tons of this material, for which they paid about \$19,720.

This plant was described by Mr. Harrison in a paper before the Municipal Health Exhibition in 1908, in which it was offered as a method for reducing rough refuse "in one operation to a material resembling mould, suitable for immediate use on the land as manure, or for mixing with clay or heavy soil." The plant started work toward the end of October, 1906. At first there was considerable breaking of the beaters

and grids, caused by the quantity of steel and iron found in the refuse. These parts were replaced by heavier ones, which greatly reduced this breakage. The plant was driven by two 40-h.p. electric motors, belt connected, running at 650 revolutions per minute and producing about 1200 revolutions per minute in the machines.

The cost of operation, including power, labor, etc., but excluding overhead charges, is about 50 cents per ton. Of the 57 cents per ton received for the crushed material, handling and transportation leaves only about 14 cents to be applied toward the cost of crushing, leaving the net cost of this about 36 cents per ton. Of the operating cost, electric power (at 2 cents per k.w.h.) costs about 16 cents per ton; labor, 26 cents a ton; beaters, grids and repairs, 6 cents per ton; oil and sundries, 2 cents per ton; a total of 50 cents a ton.

Mr. Harrison stated as the advantages of this method that it occupies very little space and crushes the refuse without any nuisance from dust or smell, and practically deals with the whole of the refuse, leaving a very small quantity to be dealt with by sale and burning. A considerable quantity of the food condemned by the sanitary staff is disposed of quite easily by passing it through the crushers with the other refuse.

The machine described is being introduced into this country under the name of the Gardner crusher and one has been operated at the Southampton street dump, Boston, for several weeks by Daniel P. Sullivan, a bidder for the contract to dispose of the city's garbage. Newspaper reports state that on June 22 Commissioner of Public Works Rourke witnessed a test of the machine in which the waste was reduced to about 50 per cent of its former bulk, the product closely resembled coal ashes. This machine is operated by electricity. A capacity of 25 tons a day is claimed for it, or even more if fed automatically.

ALASKA ROAD COMMISSION

SINCE collecting and publishing the data concerning State road construction and supervision a few weeks ago, we have received, too late for tabulation in that issue, information from the engineer officer of the Alaska Road Commission, Glen E. Edgerton, concerning the work done by that commission. The commission is under the U. S. War Department and consists of a Lieutenant Colonel, First Lieutenant and Second Lieutenant. For administrative purposes the territory is divided into districts (at present five in number), each under immediate charge of a resident district superintendent.

The funds at the disposal of the commission consist of special appropriations from Congress for main military roads and 70 per cent of the "Alaska Fund" which is drawn from the collection of trade licenses outside of the incorporated towns in the territory.

The U. S. commissioner in each local precinct appoints a road overseer, who collects a poll tax of \$8 or two days' labor, and expends such funds and labor locally where collected. This road overseer is entirely independent of the commission and his expenditures are usually made on local routes conforming to the general plan of the commission. Owing to the fact that the law is not enforced in many of the precincts and that residents of incorporated towns are exempt, these expenditures are very inconsiderable.

During the year 1910 the territory built 39.05 miles of wagon roads, 86.25 miles of winter sled roads and 373 miles of trails; spending a total amount of \$375,000. The amount available this year will probably not exceed \$275,000.

The wagon roads are simply earth roads surfaced in the natural soil with road machines and drags, being graveled or corduroyed only where excessive moisture makes this necessary. Sled roads are unsurfaced, being intended only for winter travel. Trails are locations usually made with a view to ultimate development into roads, and are cleared, graded and bridged to be passable by pack trains in summer and dog sleds in winter. Laborers' wages vary from \$2.00 to \$10.00 per day and other expenses and materials vary accordingly. Consequently, unit costs would mean nothing unless accompanied by full details as to prices.

STREET DEPARTMENT DEVICES

THE Superintendent of Streets and Sewers of Waterbury, Conn., Benjamin Chatfield, in his report for 1910 describes a device which is used in emptying into the street department's carts the cans which have been filled by the patrol sweepers with street sweepings. Thirty-five uniformed men are employed, each having a section of paved streets assigned to him. All the sweepings are placed by him in cans as they are collected, and these cans are emptied four times a day. In emptying the cans the device shown in the illustration is used and has been found to greatly reduce the wear on the cans and the amount of time and labor required to empty them. As may be seen from the illustrations, this consists of a simple derrick with fixed boom and a drum operated by a hand wheel and provided with a friction brake. One man can readily operate the drum, while the other guides and dumps the can and returns it to its place on the sidewalk.

Three double teams are constantly employed collecting the dirt from these cans, and during the year 1910 removed 5,703½ cubic yards of street sweepings from the paved streets. Rubbish cans to the number of forty were placed about the city in conspicuous places for receiving waste paper, etc.

Another contrivance is the stone wagon for handling curbing, flagstones, etc. This is an ordinary low-hung stone wagon provided with a frame of I-beams, two resting on the rear axle and a third on the front axle, a deep horizontal I-beam at the top serving to carry on a trolley a friction hoist. The general form of construction is shown sufficiently in the accompanying cut. This should be quite effective in preventing the damage done to curbstones and flagging in unloading them from the wagons, and the perhaps even more frequent damage to the pavements.

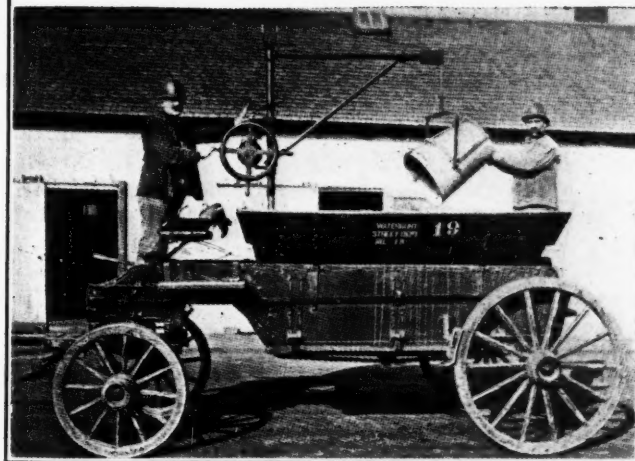
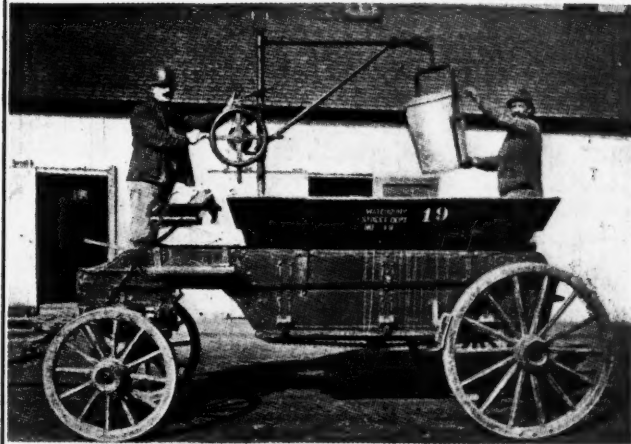
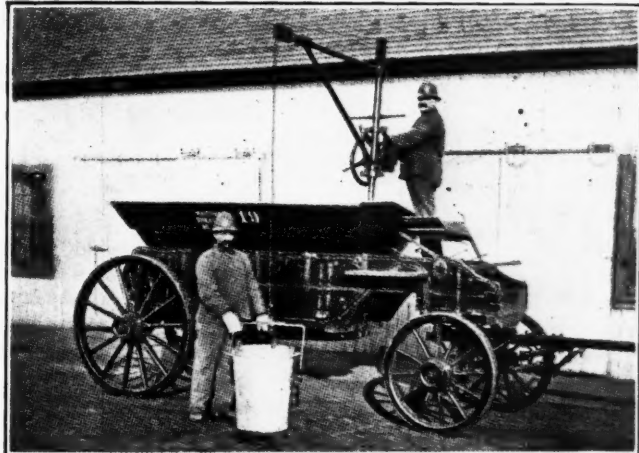
In addition to pavement cleaners, six uniformed men are employed on crosswalks about the city, and one gang of four men with a cart is constantly employed raking stones and picking up paper and rubbish on dirt and macadam streets. It requires two weeks for this gang to cover all the sections once. It is hoped to be able to employ two gangs this year and thus clean all the streets at least once a week.

METER READING DIRECTIONS

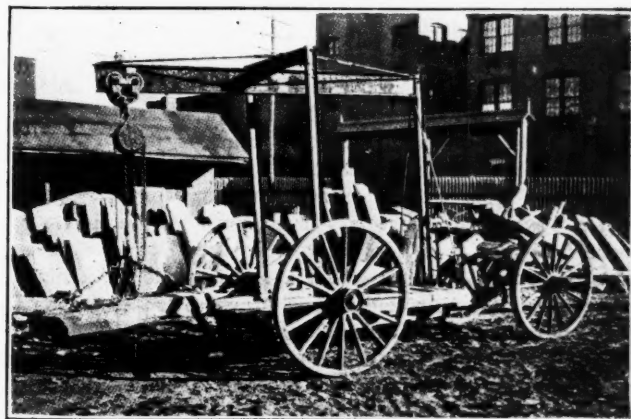
THE Water Commission of East Orange, N. J., has issued a six-page leaflet, which it has distributed among all the consumers, giving instructions for reading water meters and advising and urging each consumer "to read and record the registration of your meter regularly at least once every week. By doing so you will be able to detect leaks in the pipes and fixtures in your house and have them repaired before excessive loss has occurred; and also to guard against waste or excessive use of water on your premises. . . . This systematic reading of the meter is urged, first, for your own protection against excessive bills, and second, to avoid friction and misunderstandings with the water department."

"While the water department must necessarily charge you for all the water registered by your meter, it desires that your bills should not be excessive, and asks your co-operation in preventing leakage or waste, which is nearly always the cause of excessive bills. In the ordinary family the water used should not exceed 6 cubic feet or 45 gallons per day for each occupant of your house (including servants), and if you find the meter is registering much more than that quantity we advise that you look into the matter carefully to discover and remedy the cause."

The pamphlet includes a diagram showing a top of a meter and gives instructions in detail for reading the same. It also gives a few suggestions as to where leaks and wastes are most likely to be found in a residence. Such communications as this from a company or water department to its consumers probably assists in maintaining a cordial feeling between the two and inspiring the consumer with confidence that the company or department is not anxious to see the consumer run up large bills but wishes merely to receive pay for the amount of water actually consumed usefully.



DEVICE FOR HOISTING STREET SWEEPINGS CAN



STONE WAGON EQUIPPED WITH ONE-TON HOIST AND TROLLEY

EXCESS CONDEMNATION. ASSESSMENTS

Advantages of the Former—More Equitable to Property Owners and to City—Assessing for Local Improvements

Extract from a paper before the conference on City Planning by Lawson Purdy, President Department of Taxes and Assessments, New York City.

IN Europe it has been common to take more land than is required for the immediate public purpose for which land may be taken and thereafter sell it or lease it under appropriate restrictions. This method has been adopted lately in London in the opening of the King's Way and several other streets. In one case the sale of the land acquired bordering the newly open street has entirely paid for the land taken for the street and for its cost. It is expected that in the case of the King's Way the cost of the new avenue will be very slight, if anything, in excess of the money received for the land sold.

In the United States the taking of more land than immediately needed for the particular improvement has been seldom resorted to. An old decision of the New York Court of Appeals may perhaps render it impossible to pursue this policy in the State of New York until the Constitution is amended. An amendment has been approved by the Legislature and if again approved will be submitted to the people in November, which defines the taking of additional, adjoining, continuous or neighboring property as a taking for a public use. The evil to be remedied is grave. When the streets are widened or new streets cut through old parts of the city, irregular and small-sized plots of land are left totally unsuitable for improvement. There are streets in New York today which have been widened for ten years, but still look as though they had been devastated by an earthquake. The reason is that when the map is inspected it is found that there are all sorts of small bits of land in separate ownerships, just as they were when the street was widened. If, when the street was widened, the city had acquired approximately 100 feet more land than was taken for widening, the land could have been sold to advantage, and would have been improved immediately by the erection of suitable structures. The land would have been sold for more than the city had to pay for it. The additional money received would have helped to have paid for the improvement. As it was the property fronting on the street was assessed for the expense of the improvement, and the owners of the property were heavily burdened although unable to reap the benefit of the increased value given to the land by the widening.

When Delancey street was widened a few years ago, lots less than 10 feet deep in some cases were left fronting for 100 feet on the widened street. Adjacent to these lots were other lots fronting on the side streets and lying parallel to Delancey street. Delancey street was widened because it was needed as a great thoroughfare for the approach to the Williamsburg Bridge. The land on Delancey street after it was widened was worth very much more than the land on the side street intersecting it. If the city had taken about 100 feet more land than was required for the widening, the land could have been sold for a profit, the owners of the land so taken would have been saved excessive assessments and the street would have been quickly improved with structures adapted to the new uses demanded by the new conditions.

ASSESSMENTS FOR LOCAL IMPROVEMENTS

It is by no means necessary in all cases for the city to take more land than is required for a street. When the street is opened through property which is not improved, the simplest procedure is the best, and that is to assess the cost upon the property benefited. In order that a city plan may be developed the power to assess the cost upon the property, which is enhanced in value, is an absolute necessity.

In most cities of the country the cost of new streets, including paving and sewerage, is paid for by the assessment of

the cost upon the property benefited. This should be the method in all cities, although power should also be given to the proper local authorities to determine what part of the cost should be borne by the city at large. There are cases where new streets are such a general benefit and the cost so greatly exceeds what would be spent for merely local improvements that it is but just that the city as a whole should bear a part of the expense. Under ordinary circumstances, however, a new street enhances the value of abutting land by a sum much in excess of the cost of the street. There is no injustice, therefore, in assessing the cost upon the property benefited. The general policy of assessment for benefit may well be extended to the payment for the construction of street railway or rapid transit lines. A provision of this kind is now incorporated in the Public Service Commission law of New York.

ESTABLISHING STREET GRADES

SUPERINTENDENT of Streets and Sewers Benj. Chatfield, of Waterbury, Conn., in his report for 1910 calls the attention of the Mayor and Council to a condition of affairs which is found to a greater or less extent in nearly all the cities of this country. His discussion of the matter is as follows:

Although our Charter states that no private or public way shall be opened until lines and grades have been established by the city, this section has never been enforced. Miles of streets are being opened by private persons or corporations in violation of this section in all parts of this city. The lines and grades are made to suit the lots and in a great many cases the whole extent of the grading is the turning over of the turf for a strip of 40 feet in width. Lots are then sold and people commence to build, some believing that the city will accept the street as it is graded, others anticipating that the city will eventually fill or cut in front of their lots, build above or below the present grade.

After a time, improvements are wanted, such as sewers, water mains, curbing and sidewalks, but before these improvements can be made the street must be legally accepted. Petitions are accordingly presented to the various Boards and if not followed closely by petitioners are often laid on the table or referred to various Committees or Boards and lie in this state for months and sometimes years. Building continues and soon the majority of the lots have houses on them.

Every municipal engineer knows the difficulties encountered in establishing lines and grades on streets where houses have been erected. No matter how skillful, he cannot adjust them to the satisfaction of all the abutting owners, nor can he establish them to as good advantage as would have been possible before any buildings had been erected. Owners claim heavy damages for any change in the grade or line. Some have been told, by the selling agent from whom they bought, that there would be no change; others were informed that the greatest change would be six or seven inches. Lines and grades are finally established and one-half the abutting owners are dissatisfied with them.

According to the Charter the city should receive in assessments two-thirds of the estimated cost of grading new streets. This is seldom the case. More often, the city pays two-thirds and the abutting property owners one-third. This extra expense is caused by the building of retaining walls and steps which are not taken into consideration by the Board of Assessments nor the property owners, at the various hearings. It is not until after the street is graded that the majority of property owners fully realize how a 2-foot cut or fill affects their property.

Further on in the report Mr. Chatfield recommends the establishment of at least lines and grades on all main roads to the town lines. "They will have to be established sometime and this can be done at less expense now than later. The land damages would be slight on account of the present small land values and the assessments would not be payable until the road was finally graded, which might be years. Fewer property owners would have to be dealt with and I believe waivers could be secured in the majority of cases." Such lines and grades having been established, not only would future buildings be constructed in a position which could be permanent, but the city could from time to time bring the road to its final grade as funds permitted or as there was a demand for earth for filling or for dumping spots to receive waste earth or ashes.

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CHANGE OF ADDRESS

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Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

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Sanitation in the South

FIRE insurance companies have for many years united in carrying on investigations and performing missionary work looking to the reduction of fire risks throughout the country—this solely as a business precaution. A combination of life insurance companies to encourage sanitary conditions throughout the country would seem to be equally desirable from a business point of view; and such has been suggested by a representative of a Hartford life insurance company who has recently been investigating sanitary conditions in southern cities in behalf of that company. He visited thirty-two cities, mostly in the south and southwest, and carefully inspected them with reference to their water supply, sewerage, garbage disposal, food inspection, boards of health, climatic and topographical conditions and the sentiments of the people and officials in respect to municipal sanitation.

He reports in general that southern cities have made great progress during the past ten years and that they are now as a rule paying as much attention to the health of their citizens

and spending as much money in improvements affecting the general health as the cities of the north. Most of the cities have a fairly good water supply, and in many it could be called excellent. The same could be said concerning the sewage systems. There is one respect, however, in which great improvement is to be desired, and this must largely depend upon the creation of favorable public opinion. The extent to which city water is used by all the citizens varies from 20 per cent to nearly 90 per cent, probably 70 per cent being a high estimate of the average percentage of inhabitants of cities of 50,000 or over which use city water. The remaining 30 per cent obtain their water supply elsewhere, mainly from shallow wells, most of which are subject to pollution. The percentage of residences connected with the public sewers is even smaller, and is estimated by the investigator, Hiram J. Messenger, to approximate 60. In two of the cities boards of health have no authority to compel residents to connect houses with the sewer or with the city water mains, even when these are laid in the streets in front of the houses. Laws requiring this to be done have been opposed in some cities by builders and others who complained of the cost of making such connections where the houses have already been provided with wells and cess-pools. Here certainly is room for effective work by civic societies and others. The failure of families to make use of the purer city water and the public sewers is a matter of interest to all citizens, since the contamination from cess-pools is by no means confined to the dwellings or grounds of those using them, and an epidemic of typhoid or other sickness originating in a house using impure surface wells is almost certain to spread to families which have taken the precautions referred to.

Of all the cities visited Mr. Messenger reports Savannah, Ga., as being in every sanitary respect most commendable. Every house in the city, even the most wretched negro hovel, was connected with the city water supply; and every building, except in one small new section, was connected with the public sewers, these facts being learned by personal inspection and not merely from the report of city officials. The Health Department generally, including the bacteriological laboratory, was highly commended for its efficiency and thorough equipment.

It is indeed gratifying that a presumably unbiased expert should report so favorably concerning the precautions being taken by our southern municipalities to safeguard the health of their citizens of all classes.

Ontario Health Laws

THE chief health officer of Ontario, John W. McCullough, has issued a notice to the municipal authorities of that Province calling their attention to the fact that the law requires that the municipal council of any municipality undertaking the establishment of a system of water works or sewerage submit the plans and specifications thereof to the Provincial Board of Health for approval, such approval being necessary to the legality of by-laws for raising the money for carrying out the plans. In the case of a public water supply an analysis of the water is required, which will be furnished by the laboratory of the Provincial Board of Health, which furnishes sterilized bottles for taking the samples.

"Having in view the importance of preserving the pure character of the rivers, streams and lakes of the Province, the regulations of the board strictly provide that garbage, manure, excreta, vegetable or animal matter or filth should not be discharged into or allowed to pollute such waters."

Purchasing Coal by Specifications

THE School Board of Boston, Mass., has for some time been buying coal on specification, but not until recently had it taken any steps to determine whether it was receiving what it was paying for. A few weeks ago it began analyzing the coal delivered and discovered that it was below the stipulated quality. As the result of one analysis, costing \$10, a coal dealer was required to pay the city a rebate of \$873.01 for coal delivered.

STREET LIGHTING DATA

City.	Date of Contract.	Length of Contract	Approximate Number of Lamps Used.	Type of Lamp.	Wattage of Lamps.	Amperage of Lamps.	Lighting Schedule (Hours.)	Contract Price (per lamp per year.)	Remarks.
Akron, O.	1902	10 yrs.	400 Overhead	Magnetite....	320	4	abt. 2800	About \$80.00	Steam
Baltimore, Md.	Sept. 3, 1910	1 yr.	717 O.H. 457 U.G. 1012 O.H. 577 U.G. 520 O.H.	Enclosed arc.. Magnetite.... Incandescent.	520 320 60	6.6 4 4+ 6.6	4000	60.25 O.H. 75.00 U.G. 60.25 O.H. 75.00 U.G. 23.50 O.H. 48.50 U.G.	Steam and Wat'r Pow.
Boston, Mass.	May 5, 1909	5 yrs. (Allows 1 yr. re- newals after 5 years.)	1200 100 500	Magnetite.... Genl. Electric Gilbert.....	500 500 500	Av. c.p. 800 Av. c.p. 1600 6.6	3828	103.54 156.27 92.39	
Buffalo, N. Y.	Mch. 1, 1907	5 yrs.	3204 O.H. 568 U.G. 159 O.H. 78 O.H. 10 U.G.	Enclosed arc.. Magnetite.... Incandescent.	455-488 320 Cluster 5-60 ea.	6.6 4	3948½	56.00 O.H. 75.00 U.G. 56.00 37.50 O.H. 37.50 U.G.	Water power 22 miles distant
Canton, O.	Mch. 29, 1906	10 yrs.	791 O.H.	Open arc.....	460	6.2	All night Moonlight	60.00 O.H. 64.00 U.G. 41.50 O.H. 44.00 U.G.	Steam power
Cleveland, O.	Jan. 1, 1911	1 yr.	1090 O.H. or U.G. 50 175 278 1178 400 60	A.B. Encl. A.B. Encl. Enclosed arc.. A.B. Encl. Open arc..... Magnetite.... Enclosed arc..	450 495 495 638 480 320 600	6.6 7 6.6 5.6 9.6 4 7.5	3760	53.88 53.88 53.88 53.88 53.88 53.88 53.88	
Covington, Ky.	Jan. 6, 1908	1 yr. (1 yr. re- newals up to 5 yrs.)	729 125	Enclosed arc.. Incandescent.		6.6 32 c.p.	4000	55.00 27.00	
Dayton, O.	1910	10 yrs.	Minimum 600	Enclosed arc.. Incandescent.	462	6.6 60 c.p.	3830	66.00 24.00	
Denver, Col.	June, 1906	10 yrs.	1603 O.H. 252 O.H. 524 O.H. 765 O.H. 166 U.G. 112 O.H.	Open arc..... Enclosed arc.. Magnetite.... Incandescent. Ser. Tungsten. Enclosed arc..	450 350 320 200 75 450	9.6 6.5 4 50 c.p. 7.5 7.5	3800	60.00 60.00 60.00 28.00 28.00 60.00	Steam and water power
Detroit, Mich.			4565 in 1909	Magnetite.... Enclosed arc..	320	4	3874	50.00	Municipal plant
Fort Wayne, Ind.	Aug. 29, 1908		500 O.H. 30 U.G. 50	Magnetite.... Tungsten....	360 100	4	3500	53.00 O.H. & U.G. 15.00	Municipal plant
Hartford, Conn.	Apr. 1, 1909	5 yrs.	425 O.H. 156 U.G. 1522 O.H. 69 U.G.	Magnetite.... Incandescent.	300 at arc 125	4	3960	60.00 O.H. 64.00 U.G. 17.00 O.H. 25.00 U.G.	Steam and water power
Indianapolis, Ind.			1875 O.H. 109 U.G. 391 O.H. 109 U.G. 200 O.H.	Open arc..... Enclosed arc.. Incandescent.	450 500 75	9.6 9.6-6.6-5		70.30 O.H. & U.G. 70.30 O.H. & U.G. 35.00	Steam plant
Lexington, Ky.	Mch. 1, 1911	1 yr.	541 O.H. 35 O.H.	Magnetite.... Incandescent.	495 50	6.6 110-volt multiple	All night	74.00 8.40	Steam plant
Lima, O.	Apr. 1909	10 yrs.	212	Magnetite....	320	4	All night	57.50	Lighting Co. made several concessions
Los Angeles, Cal.	Jan. 1, 1911	1 yr.	118 2902 62 765 91 28 671 posts, 5 lamps ea.	Enclosed arc.. Enclosed arc.. Magnetite.... Tungsten.... Carbon inc.. Carbon inc.. Tungsten....	430 450 320 50 3000 3000 100 ea.	6.6 6.8 4 6.6 16 c.p. 32 c.p.	3000 3838 3838 3838 3000 3000	60.00 75.60 75.60 7c per kw-hr. no lamp re- 7.80 with lamp renewals 19.80 with lamp renewals 4c per kw-hr. no lamp re-	Water power and steam auxiliary. renewals
Louisville, Ky.			2461	Magnetite....	520	6.6	4000	67.00	
Memphis, Tenn.	No Contract		1110 O.H. 82 U.G. 23 O.H.	Enclosed arc.. Incandescent.	500 80	7.5 7.5	4000	75.00 O.H. & U.G. 27.00	
Milwaukee, Wis.	Dec. 5, 1905 No new contract	5 yrs.	1027 O.H. 1128 U.G.	Open arc..... Enclosed arc..	514.8 475.2	9.9 6.6	3813	65.00 O.H. & U.G. 65.00 O.H. & U.G.	Steam and water power
Minneapolis, Minn.	No contract		794 O.H. 16 U.G. 574 487 U.G.	Open arc..... Magnetite.... Ornamental....	450-500 495 5-100 ea.	9.6 6.6	3760	70.00 O.H. & U.G. 70.00 O.H. & U.G. 72.00	Water power. New bid called for
Newark, N. J.	Sept. 1, 1908	4 yrs.	2369 O.H. 240 U.G. 172 124 U.G.	Enclosed arc.. Incandescent. Flaming arc..	450 100 1300	7.5 7.5 16	4000	70.00 15.00 300.00	Steam power plant
New York, N. Y.	Jan. 1, 1911	1 yr.		Enclosed arc.. Enclosed arc..	450 2 @ 250ea.	10	3950	95.00 130.00	
Pittsburg, Pa.	Feb. 1, 1911	1 yr.	3067 O.H. 363 U.G. 710 O.H. 217 U.G. 135	Enclosed arc.. Magnetite.... Incandescent.	100	4 & 6.6 6.6 & 7.5	3900	70.00 O.H. 90.00 U.G. 70.00 O.H. 90.00 U.G. 25.00	Steam power plant
Providence, R. I.	1892	20 yrs.	1519 O.H. 365 U.G. 27 U.G. 2404 O.H. 40 U.G.	Open arc..... Magnetite.... Incandescent.	450 32 c.p.	9.6 10 5.5 & 9.6	4000	100.00 O.H. & U.G. 164.50 24.00 O.H. & U.G.	Steam power plant 5 % franchise tax on gross receipts of company.
Reading, Pa.	Apr. 4, 1910	5 yrs.	774 O.H. 503 O.H.	Magnetite.... Tungsten....	320 75	4 5.5	All night	67.50 19.20	

STREET LIGHTING DATA—(Continued)

City.	Date of Contract.	Length of Contract	Approximate Number of Lamps Used.	Type of Lamp.	Wattage of Lamps.	Amperage of Lamps.	Lighting Schedule (Hours.)	Contract Price (per lamp per year.)	Remarks.
Rochester, N. Y.....	July 1, 1907	5 yrs.	2678 O.H. 1218 U.G. 250 O.H. 50 U.G. 448 O.H. 117 U.G.	Enclosed arc.. Magnetite.... Mazda.....	450 280 60	7.5 4 7.5	4000	\$57.95 O.H. \$68.00 U.G. 57.95 O.H. 68.00 U.G. 19.34 O.H. 22.63 U.G.	Water power plant
Salt Lake City, Utah.	Jan. 1, 1911	3 yrs.	845	Magnetite....	320	4	All night	\$60.00	Water power
Seattle, Wash.....			860 O.H. 5200 O.H. 800 posts	Enclosed arc.. Incandescent. Tungsten Clusters.....	50 50 50	6.6 6.6 8 volts	4000	54.00 13.80 42.00 30.00 21.00	Water power
Springfield, Mass.....	May 1, 1909	5 yrs.	715 O.H. 479 U.G. 185 O.H. 9 U.G.	Enclosed arc.. Incandescent.	350 75	5 5	4000	71.50 O.H. 83.00 U.G. 15.00 O.H. 20.00 U.G.	Steam and water power
Springfield, O.....	Dec., 1909	10 yrs.	420 O.H.	Open arc....	540	7.5	All night	68.00	Steam power
St. Louis, Mo.....	Sept. 1, 1910	10 yrs.	1775 O.H. & U.G. 780 O.H. & U.G.	Magnetite .. Incandescent.	480 100	6.8 1	4055	12.25 per 1000 hours 4.49 per 1000 hours	Steam power
Syracuse, N. Y.....	July 1, 1907	5 yrs.	1503 O.H. 168 U.G.	Magnetite....	325	4	4000	68.00 O.H. & U.G.	Steam and water power
Toledo, O.....	Oct. 12, 1906	10 yrs.	1375	Magnetite....	320	4	All night	45.00	
Worcester, Mass.....	No contract		330 O.H. 550 U.G. 300 O.H.	Magnetite.... Incandescent.	380 75	4	4000	91.25 O.H. & U.G. 23.50	One duct in all underground construction is reserved for use of city.
Zanesville, O.....	Feb. 15, 1911	5 yrs.	350 45	Enclosed arc.. Tungsten....	400 true 75	6.6	3830	57.00 23.00	Steam and water power
Cincinnati, O.....	June 1, 1902	10 yrs.	5000 O.H. 1000 U.G.	Enclosed arc.	300	4	3914	60.00 O.H. 72.00 U.G.	
	June 1, 1912	10 yrs.	Ornamental posts with	Magnetite.... Tungsten clusters..... Series Tungsten....	320 5 @ 60 ea. 80	4 110 volt 4	3914	50.00 O.H. 55.00 U.G. 56.00 per post per year 13.00 O.H.	4975 magnetite lamps, 800 clusters and 3000 tungstens used as a basis of computing bids

O. H. = overhead. U. G. = underground.

STREET LIGHTING IN SEVERAL CITIES

In our issue of March 1 we published an abstract of a report upon street lighting by certain consulting engineers and citizen's organizations of Cincinnati, these reports having been made preliminary to the letting of new street lighting contracts by the city. Shortly after the publication of this article the advertisement for the contract was withdrawn and many of the suggestions contained in the reports abstracted were adopted in modifying the original provisions. Recently a contract has been awarded to the Union Gas & Electric Company, the prices being shown in the accompanying table.

While the study of the problem was being made an investigation was conducted by the Bureau of Municipal Research, blanks being sent to various cities in an effort to collect a considerable amount of information concerning existing conditions and prices. Through the courtesy of J. E. Barlow, of that Bureau, we are enabled to present herewith a tabulation of the information so obtained.

TRAFFIC ON FLEET STREET, LONDON

It has been customary for a number of years to take a census of the traffic for a single day upon some principal London thoroughfares. The same day of the month has been selected as nearly as possible from year to year, so that the enumeration might be made under approximately similar conditions.

One street chosen for the census is Fleet Street, a very important thoroughfare extending from one end of the Strand to Ludgate Circus. It is a convenient and direct route to the city proper, and is traversed by several lines of omnibuses. The

striking feature of the census on Fleet Street (and this would be true in greater or lesser measure of all the other London streets) during the past five years has been the rapid displacement of horse-drawn vehicles.

The traffic of Fleet Street was taken for 12 hours, from 8 a. m. to 8 p. m., on April 19, 1911, and compared to the same period and day in 1907. On April 23, 1907, 4,143 horse cabs and omnibuses passed along Fleet Street and only 1,043 motor cabs and motor omnibuses, while on April 19, 1911, there were 4,300 motor cabs and omnibuses against 486 horse cabs and omnibuses. On the day that the census was taken this year a strike was threatened by the taxicab drivers, so that the number of hansoms in use was in all probability much in excess of the daily average.

On the 1907 census day there were only 48 taxicabs, against 1,902 horse cabs, but on April 19, 1911 the number of horse cabs was reduced to 391 and the number of taxicabs increased to 1,616.

The 62 motor vans passing on Fleet Street on April 19, 1911, was an increase of 106.66 per cent over the number in use on the corresponding day in 1909 and nearly 38 per cent over the number on the April day selected for 1910. The increasing use of motor vans is urged in London because of the great delay that is now occasioned to motor traffic by the procession of heavy horse-drawn wide drays proceeding slowly along the principal business streets, many of which are very narrow and easily blocked.

The total motor traffic on Fleet street more than quadrupled in the four years. On the April day in 1907, 1,126 vehicles passed; in 1908, 2,073; in 1909, 2,392; in 1910, 3,884; and in 1911, 4,481.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

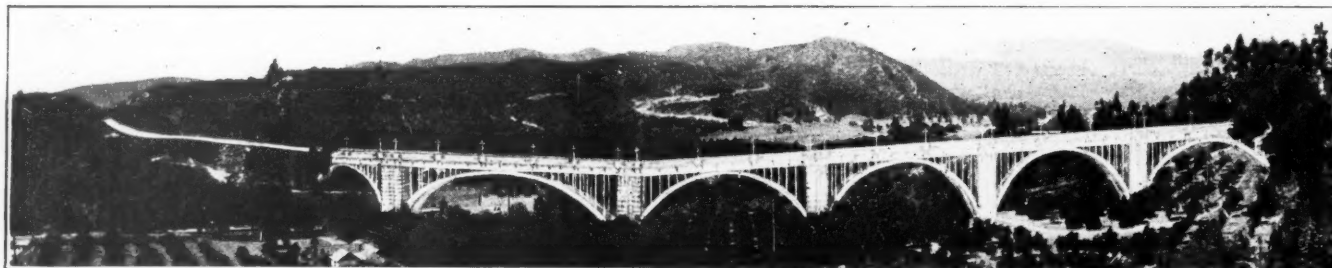
ROADS AND PAVEMENTS

Streets are Oiled on Both Sides at Once

Lexington, Ky.—The oiling of the city streets which was begun about 10 days ago has been pushed rapidly in spite of several days of unfavorable weather, and between 20 and 25 streets have been completed. About 60,000 gallons of oil have been spread to date, and the remainder of the amount contracted for—between 100,000 and 175,000 gallons—which was estimated to be sufficient to complete every street in the city, will be disposed of as fast as it arrives and the streets can be put in condition to receive it. The policy announced by Mayor Skain of oiling but one side of a street at a time has practically been abandoned. The residents of the first streets on which the proposed scheme of oiling but half the road at a time was tried objected to such an operation, and since then the oiling has been almost without exception on both sides of the street at once.

Council Refuses to Accept Street Work

Berkeley, Cal.—Following several protests from residents of South Berkeley, the Berkeley Council has instructed the City Clerk to notify the Southern Pacific Company that the character of rock being placed on California streets was unsatisfactory to the Council and the street would not be accepted. The adverse resolution followed a statement of the conditions on the new street, in which Commissioner Hoff requested the entire Council to visit the work and see for themselves its unsatisfactory character. Hoff was endorsed by Commissioner Norton, who declared that some of the rock had already been condemned by City Engineer Jessup, but that much of an inferior character was still being used. Norton declared that the Southern Pacific Company was as anxious as the city to have good work done, and after scoring the contractors in no uncertain language, he moved the resolution refusing to accept the street.



WEST COLORADO STREET BRIDGE, PASADENA, CAL. ABOUT TWO MONTHS AGO \$200,000 BONDS WERE VOTED FOR ITS CONSTRUCTION. IT MAY INCLUDE THE LONGEST REINFORCED CONCRETE ARCH IN THE UNITED STATES

Thirty-three Miles of Road Built in Three Hours

Trinidad, Col.—Five hundred men and boys with teams, plows, scrapers and graders built 33 miles of scenic roadway in three hours one day last week, between this city and Stonewall, a beautiful scenic resort west of this city, at the foot of Stonewall Mountain. The distance was divided into 40 sections and each portion built by 12 or more men and boys in charge of an experienced roadbuilder. Nearly 100 automobiles were used in transporting the workers to the different divisions, and the completion of the task was celebrated by a big open air dinner at Stonewall. Millionaires doffed their coats and worked by the side of scores of unemployed who were given this opportunity to earn a few dollars and a square meal, and 100 or more boys, among them the Boy Scouts of this city and Sopris, aided in the work by clearing the roadway of loose stones.

Safety Station in Street Requested

San Francisco, Cal.—The Board of Works has been asked by the Merchants' Association to provide for a safety station on the south side of Market street, opposite Lotta's Fountain, to accommodate people going to the ferries. It has been thoroughly demonstrated that these stations are no real obstruction to teams and that, on the contrary, they facilitate the passage of vehicles at congested points by requiring them to proceed in orderly lines. The number of people boarding cars there to go to the ferries is very large, particularly during the late afternoon and evening, and these people are subjected to danger from automobiles and passing vehicles, as they have no protection on the south side of the tracks while waiting for a car or boarding the same. The cost of these stations is very small and a greater number of people probably receive more benefit from them every day than from the same amount of money expended on any other improvement.

Supervising Engineer May Be Employed.

Lexington, Ky.—The Joint Improvement Committee was called together for the purpose of considering ways and means of having a supervising engineer appointed to act in conjunction with the City Engineer and his assistants in inspecting the new streets, especially those made of asphalt, which are to be constructed in the near future under contracts let a few days ago. There was not a quorum present at the meeting, but it was announced that in order to save further delay in getting committee action and to bring the question to something definite an ordinance would be prepared and presented at the next meeting of the Council, without any committee action whatsoever. This method of inspection of streets is largely followed elsewhere, especially in the larger cities, and seems to work well, relieving the local Engineering Department of much of the tedious routine work of inspection, such as examining the sand, cement, asphalt and the mixtures of the various ingredients which go into the finished streets.

Disfiguring of Streets to Stop

San Francisco, Cal.—The movement inaugurated in 1908 by the Mission Promotion Association against the disfigurement of the streets in the Mission has been revived, and the assistance of the improvement bodies of the district secured in placing that part of the city in a presentable condition during the next four years. Overhead wires on Valencia and Mission streets, as far southerly as Army street, have been removed during the present year, after strenuous efforts by the Committee on Laws, Ordinances and Charter Amendments, which was appointed by the Association to draft an ordinance requiring the public service corporations gradually to eliminate their poles and wires in the Mission, as well as in other sections of the city. As a consequence of the enforcement of this ordinance the appearance of the Mission streets has been greatly improved.

SEWERAGE AND SANITATION

Easton Makes Semi-Holiday of Big Improvement

Easton, Md.—Business was practically suspended here the day the town started its \$110,000 improvements by breaking ground for its new sewer system. Mayor Higgins lifted the first clod, in the presence of a vast crowd, while speeches were made by prominent citizens.

Sanitary Drinking Fountains Installed

Youngstown, O.—It is pleasing to note the installation of sanitary drinking fountains in different parts of the city, a measure that has been all too long neglected. The sanitary water fountain, which does away with the germ laden drinking cup, is a mark of progress. The dangers of the public drinking utensil have long been apparent, yet the public has been slow to listen to the warning of science against its use. Youngstown now has three fountains of the kind mentioned and they have been made possible by public spirited citizens or organizations who have done the city a great service by installing them. Such an example should be followed by other like gifts, for which there is much room and of which there is a great and growing need.

Board of Health Orders Clean-up

South Bend, Ind.—South Bend is to undergo a renovation, according to a notice issued by the Board of Health. With the hot days the danger of disease from accumulated garbage and rubbish is greatly increased, and the Board intends to strike at the root of the greater amount of sickness by preventing it altogether. The order calls for the sending of all table refuse, decayed meats and fish and dead animals to the city crematory. Ashes and other rubbish may be dumped in the city dumps at the foot of the Sample street bridge or in Leeper Park dump. Private dumps are permitted where the refuse is kept covered, but garbage, dead animals and decayed fish and meat cannot be so dumped but must be sent to the crematory. Officers of the Health Board state that it is the intention to enforce the law and prosecution will follow failure to observe it.

Authorities Order Open Wells Filled Up.

Chattanooga, Tenn.—The city health authorities are now beginning a campaign against the open well, to the end of having every one of them filled up. It will prove surprising to everybody to learn that there are probably 120 open wells now in the city from which the people are using water. In the opinion of Commissioner Evans, an opinion that will be shared by every citizen who is posted in matters of sanitation, there is no one thing more dangerous to the health of the city than the practice of drinking water from an open well. Aside from the fact that the city has outgrown the day of wells, it is a scientific truth that pure water can hardly exist in a well in a city the size of Chattanooga. There will be no delay in removing the menace of the wells. Within 48 hours from the receipt of the instructions by the Chief of Police it is expected that there will not be an open well within the corporate limits.

Plan Campaign to Prevent Disease

Dallas, Tex.—Dallas is to have an educational course in sanitary and clinic measures proper for preventing the spread of contagious or infectious diseases. This much seems assured from a joint meeting of the Board of Health, the Board of Municipal Commissioners, the Red Cross, the United Charities and other organizations. Following reports from the sanitary inspectors concerning conditions in the city, and statements from physicians about conditions in the schools and measures needed to improve the general health of the children, there was discussion of plans and a committee was appointed to prepare for a general mass meeting to be held at some early time before the opening of the city schools for the work of a new year. The purposes of the mass meeting will be to deliberate upon measures for securing nurses and physicians for inspection work in the city schools, the need for the new city hospital and more adequate facilities for handling the tuberculosis troubles in or out of the schools, and the bettering of sanitary conditions.

WATER SUPPLY

Town Aims to Condemn Water Works System

Pasco, Wash.—The City Council has passed an ordinance to third reading, providing for the purchase of the city water works from the Pacific Power and Light Company by condemnation proceedings. The Council wants to push the matter through, acquire the plant by eminent domain proceedings, and bring it up to a high state of efficiency, as it is now inadequate for the city's needs.

Filtration Plant Nearing Completion

Rensselaer, N. Y.—The extensive improvements under way at the filtration plant of the Rensselaer Water Company are progressing and will probably be completed early in the fall. The improvements include a one-story brick building which will be equipped with a new filter. The additional facilities will provide for the filtering of 1,000,000 gallons of water in 24 hours. When the improvements are completed, Rensselaer will have one of the best filtration plants in the country.

New City Water Found Pure

St. Paul, Minn.—Water from the new wells at McCarron Lake, which was turned into the city supply last week, has been analyzed by the Bacteriological Department of the Health Department and found to be an ideal drinking water. Report on the analysis is that from both the chemical and bacteriological standpoints the water is good. Water Board members say St. Paul's reputation for supplying pure water will remain unchanged by reason of new sources of supply.

Pure Water Furnished Citizens of Knoxville

Knoxville, Tenn.—The fact that Knoxville is furnishing its citizens the purest of water is proven by the analysis of the water, according to reports on file in the office of the Knoxville Water Commission, showing the true condition of the water each day in the year except Sunday. These reports and examinations are made by Dr. William R. Cochrane, secretary of the City Board of Health. The reports are open for inspection and so is the entire plant. For the past few weeks local physicians have been advising their patients to boil the water, and this advice, and the story of a break in a sewer, have caused untold rumors to spread all over the city, until it has driven some people to the point of using well water, spring water from White Spring, and other springs near the city which may perhaps cause sickness.

Peril in Leaky Reservoir

Pittsburg, Pa.—One of the city's large reservoirs in Highland Park, having a capacity of 120,000,000 gallons a day, has been condemned following an inspection by the members of Pittsburg's new Council, Mayor William A. Magee and Joseph T. Armstrong, director of public works. Each of the officials expressed surprise that a bad accident had not occurred, and Director Armstrong said: "Acceptance of such a piece of work by the city, to be paid for out of tax money to the people, was a crime." The reservoir was completed a number of years ago at a cost of over \$500,000. Great holes and cracks line the entire basin, and close to \$200,000 will be necessary, experts say, to repair and make it safe. Meanwhile, the reservoir will be abandoned.

To Insure Purity of the Water

Portland, Me.—The trustees of the Portland Water District have filed with the register of deeds and County commissioners papers in initial proceedings pertaining to the taking by right of eminent domain of land at Sebago Lake, in the vicinity of the intake, on both side of it, sufficient to fully protect the interests of the district for years to come. The property taken extends from the location of the Mountain Division of the Maine Central Railroad to Chadbourne's Landing. Papers are in preparation providing for the taking additional land extending a half mile along the shore of the lake, so as to make altogether a stretch of about a mile and a half, on both sides of the intake. The object of this is to insure the purity of the water for the consumers of the district.

Water Meters Save Money

Spokane, Wash.—A record in water meter installation has been made by Commissioner of Public Utilities C. M. Fassett. A report from the construction department before him last week shows that 639 meters were installed voluntarily by property owners at their own expense between January 1 and June 1. This is an average of 116 a month, breaking all records. The rate of installation is increasing, the report showing that so far this month 140 meters were installed by request of water consumers. The rush for water meters is caused by the spreading conviction among the consumers that buying water that way is the most economical way.

Steps Taken to Avoid Water Shortage

Tacoma, Wash.—Seeking to avert a serious water shortage, Commissioner B. J. Weeks, of the Department of Light and Water, has issued a warning to all patrons of the city system to use extreme care to prevent any unnecessary waste. Special night and day inspectors will patrol all districts where sprinkling is done and any violations of the old sprinkling ordinance or any of the regulations of the department will be penalized. Automatic sprinklers will not be tolerated; the hose must be held in the hand when sprinkling and, as in the past, extra charges for sprinkling will be levied during June, July and August.

Municipal Water Plant Nearly Completed

Gadsden, Ala.—The great pressure pumps are being placed in the municipal waterworks plant and it will require something like three or four weeks to complete the work. All operations around the plant are progressing very satisfactorily and the plant will be completed by or before August 1. It is expected that the new pumps will be put in operation within the next two or three weeks, but they will be run for some time, in order to get all the adjustments perfect, before turning them over to the city. The pumps are high duty cross compound, fly wheel extended type pumps, with a capacity of 3,000,000 gallons each 24 hours. Not all this water will be required for the present and the plant will be able to furnish the city with water after the population is more than doubled.

Officials Inspect Watershed

Rochester, N. Y.—An inspection of Hemlock and Canadice Lakes was made last week by Mayor H. H. Edgerton, Commissioner of Public Works F. T. Elwood, City Engineer E. A. Fisher and reporters representing each of the daily newspapers of the city. The feature of the trip was the declaration of the Mayor that a third conduit is soon to be laid from Hemlock to the city. There are now two conduits from the lake to the city. The third conduit will be a positive assurance that the city will never have its water supply cut off, and will provide a greater pipeage from the source of supply to the center of consumption. The capacity of the present conduits is now taxed in supplying the demand for water.

City Water Found Free from Contamination

Columbia, S. C.—The report on the Columbia Waterworks Department, submitted by Mr. William A. Boyd, city health officer, is of particular interest in view of the fact that Columbia was recently the scene of the meeting of the State Waterworks Association. It embodies the report of the bacteriologist in charge of the department who makes daily examinations of the water and who pronounces it absolutely pure. Dr. Boyd brings out the fact that both by nature and by treatment the city water is peculiarly free from contamination, either bacterial or chemical. The water supply is obtained from the Saluda River, which runs for miles over a sandy and rocky bed, with many bends, thus facilitating the natural sedimentation and purifying of its waters. The water is pumped from the Saluda River into a large settling basin, which holds a supply sufficient for two weeks' ordinary use; so that the water undergoes a settling process of at least one week. Recent researches have shown that the simple storage of water will purify it. From the settling basin the water is delivered to the coagulating basin, where it is treated with aluminum sulphate (filter alum), two grains being used to the gallon of water.

STREET LIGHTING AND POWER

New Street Lighting System Being Put In

Erie, Pa.—New street lighting system is being installed in this city by the Cleveland Street Lighting Company for the Erie Gas Company's lights. Old globes are changed for new ones, and new burners are being replaced. These are fitted with automatic lighters, and it is expected that the new system will afford 100 per cent more illumination. Colored globes will be placed near fire alarm and police patrol boxes. Colors red and green will be used, red for the fire alarm boxes and green for the police patrol boxes.

Public Service Company Ready to Remove Wires

Hoboken, N. J.—As a result of action by the Public Service Electric Company in writing to the Hoboken Street Commissioner on the proposition to remove overhead wires, there now seems to be a chance of the electric light wires coming down on several streets at least. The Public Service Electric Company is ready to proceed with the work of constructing subways and underground conduits for a system of underground distribution and is ready to commence work promptly. It will take about three months to complete the laying of the ducts and the construction of the manholes. The company, of course, will protect its openings and assume all responsibility of damage occurring from the prosecution of the work.

City Demands Lower Rates From Gas Company

Baltimore, Md.—Unless the Consolidated Gas, Electric Light & Power Company elects to reduce its rates for gas and electricity by July 15 the city will make application to the Public Service Commission for a thorough investigation of the company's business. This decision was reached by Mayor Preston at a conference with City Solicitor Edgar Allan Poe. The conference followed a meeting of members of the Public Service Commission and Mr. Poe. The company will be advised immediately by Mr. Poe of the city's intentions. Although the city's future course with respect to the matter will be based on the company's willingness or unwillingness to make reasonable reductions in its rates, the conference between the Mayor and the City Solicitor did not reach any definite conclusion as to what would be considered "reasonable" in the way of a reduction. It is believed that the city officials have in mind a reduction in gas rates from 90 cents per 1,000 cubic feet to at least 85 cents, and perhaps 80 cents, and a general revision of the electric rates for industrial use. The decision of the Mayor to give the company until July 15 to make reductions is the first definite step taken toward a solution of the rate question. For more than a year the matter has hung fire, while the city, though employing experts for the purpose, has accomplished nothing in the way of bringing the case to a head.

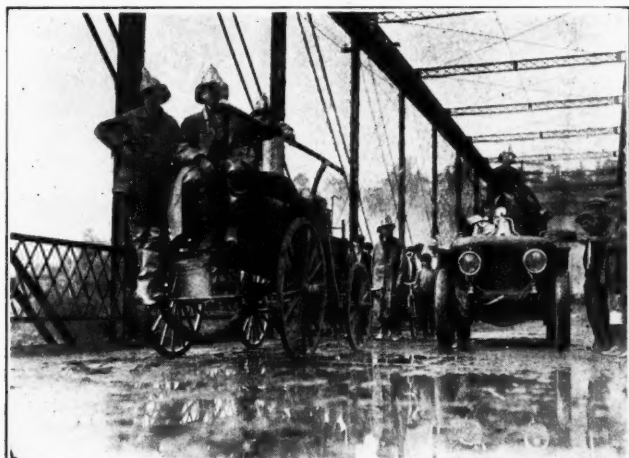
Municipal Lighting in Lansing

Lansing, Mich.—The annual report of the City Water and Electric Light Board of Lansing is a very satisfactory document to the taxpayers of that city. The two systems are conservatively valued at \$800,000 after depreciation is allowed for. In 1885 the city issued \$125,000 in bonds to buy the waterworks and in 1892 issued \$60,000 in bonds to buy the electric lighting system. Of these bonds \$75,000 has been paid. The annual report shows that for the fiscal year ending May 31, the electric light plant earned \$117,926, an excess of \$55,079 over the operating expenses of \$62,846. There is \$13,318 in cash in the treasury and the waterworks fund has been loaned \$19,183. During the year \$12,000 has been paid for a new turbine engine, \$8,216 for new boilers and \$7,500 for a new generator, showing that the board is keeping the plant in first-class condition. The earned receipts for the fiscal year of the waterworks system were \$75,710. The total payment for operating expenses was \$28,086. During the year there has been expended for construction, extension of mains and new wells \$45,793, the board having devoted the year to extensions which the growth of the city made necessary, but it is to be noted that there is an excess of \$47,623 in earnings over the operating expenses, which shows that the plant is capable of providing funds with which to make these extensions. Municipal ownership of both these utilities, but especially of the lighting plant, has been a conspicuous success.

FIRE AND POLICE

Ancient and Modern Fire Apparatus Used Side by Side

Lowellville, Ohio.—Lowellville was all but wiped out one night last week when a fire swept an entire block. Dynamiting, the services of the Youngstown Fire Department, added to that of the volunteer department of Lowellville, saved the day. The flames, when they were stopped, were sweeping along the river carrying everything before them, and Lowellville on that side of the river seemed doomed. It was only by the heroic efforts of the volunteer firemen that the flames were stayed until help could be secured from Youngstown and its department. A small Howe en-



Courtesy Youngstown Telegram

ANCIENT AND MODERN FIRE APPARATUS USED AT LOWELLVILLE FIRE

gine hand pump and a bucket brigade was the only protection against fire. The pump had not been used for some time and neither had it been inspected. It failed to respond readily, and but for the arrival of the Youngstown Fire Department's auto truck little would have remained of the section of Lowellville lying south of the Mahoning River. The sight of the ancient and modern fire apparatus working side by side attracted a great deal of attention.

New Police Patrol System

New York, N. Y.—Police Commissioner Waldo has announced that the plan of placing policemen on stationary posts where they might be found at any hour of the night would be tried in one of the inspection districts. It is the belief of Commissioner Waldo that a stationary policeman will prove of greater benefit to the city than two policemen covering posts which may take them through half a dozen side streets and into one or more avenues. By the plan proposed by Commissioner Waldo there will be a policeman within two blocks anywhere in the Third Inspection District. These policemen will remain on post for four hours, when they will be relieved for the next four hours.

Auto Fire Engine Arrives

Long Beach, Cal.—Information has been received by Fire Chief Shrewsbury that the \$8,500 fire automobile pumping engine, which the city ordered some time ago, has arrived from St. Louis. This will be the only engine of its kind on the Coast. The fire department will give a public test, at which the fire chiefs of Southern California will be in attendance.

Improving Fire Alarm Service

San Francisco, Cal.—An improved method of increasing the prominence of the locations of fire alarm boxes throughout San Francisco is being effected by the Department of Electricity. Globes painted red are being placed on electric arc lights, and will be lighted during all hours of the night and early morning. The same result during the day has been secured by carrying the bright color of the alarm box itself entirely around the pole supporting the alarm box. The Department of Electricity announces that 50 of the latest style fire alarm boxes have been received and will shortly be placed in commission.

Auto Engine Proves Superior to Steam Fire Engine

St. Louis, Mo.—A fire, June 16, fanned by high winds, destroyed eight acres of factories, warehouses and lumber yards and caused a million dollars damage. A general alarm summoned all available fire fighting apparatus in the city to the scene. Two motor engines of the new type were put in operation and did remarkably effective work. The test was the longest and most severe to which the automobile engines have been subjected in St. Louis. One engine, directed by A. C. Webb, the former automobile racing driver, who is head of the company that constructed it, ran eight and one-half hours without a stop. It furnished two streams that were declared by firemen to be superior to any thrown by the steam engines at the fire. This one engine consumed 40 gallons of gasoline as fuel during the run and kept the two streams at a constant pressure of



LUMBER YARD FIRE, ST. LOUIS, MO.

150 pounds to the square inch. Chief Swingley was enthusiastic over the effective work of the new engines.

GOVERNMENT AND FINANCE

Aldermen Vote an Increase in Taxation

Burlington, Vt.—The Board of Aldermen in special session has voted a tax rate of \$1.75 for 1911, and passed the tax budget, calling for the estimated expenditure of \$344,247.05. The tax rate is five cents more than last year and the reason therefor is an attempt to reduce as much as possible the city's floating indebtedness.

City Comptroller Files Report

Tacoma, Wash.—According to the monthly report of City Comptroller J. F. Meads, filed with the Municipal Commission, it cost the city nearly \$195,000 to operate various departments in May. This brings the total expenses for the first five months of the year up to almost \$500,000. The estimates for the year were \$905,521.40. Expenses of various departments for the month were: Health and sanitation, \$2,864.80; finance, \$9,889.48; public safety, \$24,252.66; public works, \$23,308.92; water, \$117,362.23; light, \$85,579.56. Light receipts for May were \$105,668.08, while water receipts were \$83,932.60. The actual cash balance on hand as shown by the controller's books on June 1 was \$3,192,792.22.

Spokane Spends Vast Sum

Spokane, Wash.—More than \$17,500,000 will be expended, on municipal and railroad work and building operations in Spokane this year, and of this amount the city's share is approximately \$6,000,000. The Chicago, Milwaukee & Puget Sound, the Northern Pacific and the third division of the Oregon-Washington Railroad & Navigation Companies have plans for work costing \$6,500,000 and architects and contractors estimate that fully \$5,000,000 will be invested in new buildings before the close of the year. Municipal work in progress or confirmed amounts to \$1,721,280 to date, and in addition there is \$3,936,280 for bridges and buildings, as follows: City Hall, \$665,000; South Central high school, \$450,000; Monroe street bridge, \$450,000; Latha bridge, \$245,000; reservoir, \$150,000; fire stations, \$40,000; isolation hospital \$25,000.

Mayor Ordered by Court to Call Special Election

Walla Walla, Wash.—Mandamus ordering Mayor Eugene Tausick to call an election to submit the commission form of government under the Allen law, to the people of Walla Walla has been granted by Judge Brents of the Superior Court. The decision was accompanied by the expression that the case would be carried to the Supreme Court in any event; and that had he the final decision, he would declare the law unconstitutional.

Commission Government for Trenton

Trenton, N. J.—Trenton has adopted the commission form of government, abolishing the offices of Mayor and Common Council and placing the whole of the government of the city, with the exception of the public schools, in the hands of five Commissioners to be elected within the next two months. Because of a campaign unequalled in recent years for bitterness, an unusually large vote was polled, and interest in the contest continued unabated until the result of the contest was announced. The vote as recorded was 6,792 for and 4,890 against. Only four of the fourteen wards of the city voted against the plan. Party lines were completely broken. The next move will be to nominate and elect the Commissioners and then the new form of government will be put into effect.

Small Council Takes Place of Large

Scranton, Pa.—Scranton's Council of five members was inducted to office one day last week and in a few minutes the legislative branch of this government changed from the old order of 62 members in two branches of council to one body of five members. P. P. Jordan, former selectman from the Eighth Ward, was elected president of the body, the salary was fixed at the minimum figure, \$2,000 a year for each councilman, and a fine of \$5 provided for to be imposed on members who miss regular or special meetings of Council or committee sessions. The act of assembly creating the Council of five fixed the maximum salary of councilmen at \$6,500 a year and the minimum salary at \$2,000 a year. The Council was given the power to fix the salary between these figures. The salary was fixed at \$2,000 which will remain during the term of office, the act providing that the salary cannot be raised during the tenure of office.

City Run by Manager

Staunton, Va.—From Virginia comes the novelty of municipal government administered by a general manager whose prototype is to be found in every large corporation. This scheme is a modification of the commission form of government. Three years of experimentation have been satisfactory to Staunton, with a population in excess of 12,000, and one of the most enterprising communities in Virginia. When, in March, 1908, it was decided to give the general manager a chance, it was argued that councilmen, having their private affairs, could not reasonably be expected to give their time and service gratuitously to the community. This, it was pointed out, led naturally to indifference and to the administration of affairs by a select few or by contractors interested in public work. Under the new plan it is reported that this system of favoritism is a thing of the past. The constitution of Virginia requires cities to maintain their Mayor and Council and in cities of the first class, those having a population of 10,000 or more, two branches of the Council are required. Therefore, Staunton was unable to abolish the Council and adopt a commission form of government. However, as the provisions of the code permit the Council to establish such offices as may be necessary to conduct properly the city's affairs, the idea of a general manager was conceived. The general manager devotes his entire time to the duties of his office and has entire charge and control of all the executive work of the city in its various departments, and entire charge and control of the heads of departments and employees of the city. He makes all contracts for labor and supplies and in general performs all of the administrative executive work usually performed by the several standing committees of the Councils, except the Finance, Ordinance and Auditing Committees.

STREET CLEANING AND REFUSE DISPOSAL

City to Collect Garbage at Night

Trenton, N. J.—Council's Police Committee has concluded to try out the plan of collecting garbage and ashes at night. This subject has long been agitated in Trenton, but there was always the objection that conditions were different here and that the city could not be compared with those municipalities in which such innovations had been successfully undertaken. Now, however, the conclusion has been reached that the time is ripe for night collections and they will begin next week. It is proposed to continue the plan through the summer, at least.

Street Department Adds New Equipment

Lexington, Ky.—Recently the Lexington Street Cleaning Department has taken on an aspect characteristic of the larger cities and lately, when several little push carts in which to sweep the trash were added to the equipment of the white garbed street sweepers, pedestrians smiled pleasantly at the city-like scene they presented. Several street sweepers have been put in the business district to keep the streets swept clean during the day, while the sweeping machines continue to clean up in general during the night.

Garbage Company to Have Competition

Akron, O.—Akron is likely to have competition in the garbage collection business as a result of the big increase in prices that has been exacted from the public by the Akron Garbage Co. in the past few seasons. The rate which Akron people must pay this year for garbage collection service is 20 cents a week. Not long ago the rate was 10 cents a week, showing an increase of 100 per cent in a comparatively short time. In many cities where garbage disposal has been systematized the garbage itself pays for the service of taking it away, and there are many private individuals glad to take away garbage for the privilege of disposing of it. A number of Akron citizens are now studying the Akron situation and believe they could easily get most of the local garbage business at the rate formerly charged Akron people and get a good profit out of the business. It is probable that a company will be organized.

Protest Against Collection of Garbage without License

Long Branch, N. J.—The collection of garbage by outside parties has caused a protest to be made by the Sea Board Utilization Company, which has the city garbage contract. Complaints have reached E. E. Taber, sanitary inspector, and at a recent meeting of the Board of Health Inspector Taber had a number of garbage collectors before the Board. David Groves, who represents the Utilization Company, was present to interpose his objection, calling attention to the fact that although his company was authorized to collect the city's garbage, people from Eatontown and other nearby places were removing garbage from the city limits without paying a license or complying with any of the health ordinances. A number of those who have been operating without a license were notified by Inspector Taber to cease operations until the Health Board could decide the matter. A special meeting will be held for the purpose.

City Will Improve Reduction Plant

Ft. Wayne, Ind.—The board of public works have investigated conditions and have found that it costs the city considerably less than \$1 to reduce one ton of garbage, instead of the \$1.60, claimed by the health department to be the expense. At that, though, according to the board members, the plant is far from an up-to-the-minute institution, and some effort will be made within the next few months to correct this condition. A drying room at the plant, it is claimed, would solve the question, at least temporarily, by expediting the incineration of the garbage, as well as reducing the cost by at least half.

Considering Purchase of Auto Truck for Garbage

Toledo, O.—It has been suggested to the public improvement committee to buy an automobile truck for the purpose of transporting the garbage to the plant and the committee likes the idea, but referred the matter to Service Director Cowell for his approval. A truck holding ten tons can be secured for \$5,500 and will make six miles an hour when loaded and ten miles an hour when empty.

RAPID TRANSIT

Electric Power for Mountain Incline Road

Chattanooga, Tenn.—As soon as quick work can turn out the motors and other machinery necessary and the same can be shipped to Chattanooga, the Lookout Mountain incline cars will be hoisted by electric equipment and the old cable system will be discarded. The new cars are already on the ground, ready for installation into service. They are larger than the old and handsomer. Freight will be carried inside the cars instead of upon a platform on the outside, as the old arrangement has been. There will be two motors, each of them of 200-hp. capacity, and each able to alone handle the average load up the mountain. There will be the best of safety appliances that mechanical skill can contrive and the schedules will be much reduced when the new cars are put into operation. Possibly the arrangement that will appeal to the mountain people as the most beneficial to them will be the final plan of handling freight to the top of the mountain. As soon as the new machinery is installed on the passenger incline the company will begin operations to install the old machinery on the old incline and freight will then be handled to the mountain top in carload lots, and naturally at greatly reduced rates. The company has summer rates now in effect on the incline, and the usual heavy traffic of the heated term is being handled.

Plan Big Extensions of Street Car Lines

Salt Lake, Utah.—The Utah Light & Railway Company is preparing to spend many thousands of dollars in improvements and extensions during the year commencing July 1. The fiscal year for Harriman properties runs from July 1 to July 1, and there is an inflexible rule that appropriations made for one year cannot be drawn upon until that year commences. Just now the street railway company is engaged in extending the West Temple street line two blocks south from Tenth to Twelfth South streets, and repairs are being made on South Main street, between Second and Third South streets, where a crossover has been taken out to make the track smoother. The old 72-pound rails on First and Second South streets, between State and West Temple streets, are to be replaced with 80-pound rails on new ties laid in a bed of concrete. The cobblestones between the rails are to be replaced with asphalt. The work is already in progress on West Second South street and the surveys have been made for the First South improvements. The old rails were put down fifteen years ago and are considerably worn. After July 1 the East Second South or Mt. Olivet line is to be extended six blocks from the present terminus. This will afford street car service to the high school and Judge Mercy Hospital, which is now two blocks from a car line. The proposed Halliday extension of the Sugar House line will be five miles long. It will run out the county road, south, through Highland Park. The company has until September, 1912, to complete this line and Manager Wells does not know yet whether the road will be built this year or next. A branch will likely be run south through the center of Highland Park when that section is built up next year. An extension of one of the south end lines to the proposed new Country Club's golf links in the foothills near Fort Douglas is also contemplated for next year.

City Awarded \$51,612

Boston, Mass.—In a suit brought by the city of Boston to recover the cost of installing elevators and machinery in the Atlantic avenue station of the East Boston tunnel, Judge Fessenden made a finding of \$51,612 in favor of the former. The Elevated claimed that the Transit Commission should pay for the elevators and machinery inasmuch as that body was required to erect the stations and approaches. The road claimed that the elevators were approaches. The city claimed further that the elevators were means of communication between the tunnel and the street and the elevated level, for which the company was liable. This suit grew out of the wish to avoid delay in opening the tunnel and the Transit Commission agreed to pay for the installation of the elevators, if the company would leave the liability to a court decision.

MISCELLANEOUS

Red Light Is Auto Insurance

Chicago, Ill.—Street cleaners on Michigan boulevard have adopted a new method of keeping out of the path frequented by automobiles at night. They have a miniature electric light globe pushed through the top of their hats, with a battery in their pockets and wires connected through the hat. The globe is red. The City Department, as well as the hotels and clubs along the boulevard, insist on cleaners working on the street all evening, and several have been struck and seriously hurt by machines. At first they had just common white lights on their hats, but drivers took them for cigarettes.

Water in Auto Tanks Is Carried to Horses

Philadelphia, Pa.—Thirty drinking stations for horses have already been opened by the Women's Society for the Prevention of Cruelty to Animals, the inauguration of the summer relief work being marked by ceremonies at Broad and Arch streets. The relief station at that point was dedicated to Archbishop Ryan. The ceremonies also marked



Courtesy North American, Philadelphia, Pa.

AUTOMOBILE SERVICE FOR WATERING HORSES

the establishment of an automobile service for furnishing water to horses on Market street. Owing to the heavy traffic, both on the street and on the sidewalks, it has been deemed inadvisable to place watering troughs on Market street. The society therefore has inaugurated the automobile tank wagon service to give relief to the horses. Buckets are carried on the tank for watering horses at any point on the street.

New Soil for Central Park

New York, N. Y.—Central Park soil is to be improved at once. At the request of Park Commissioner Stover and after hearing a report on the condition of the soil, the Board of Aldermen authorized the issue of \$150,000 in corporate stock for the adoption of the recommendations contained in the report. As it will take time to carry out these recommendations, the Board decided to appropriate \$50,000 immediately for the work, and to apportion the remaining \$100,000 for next year and the year after. The new treatment will consist in part of plowing up the open spaces and wornout sections, particularly, and sowing them in clover and other grasses, to form a heavy turf, which will hold moisture.

Park Addition To Be Donated

Youngstown, O.—Through a donation of land, which will be made at an early date by Horace Williamson and B. M. Campbell, the city of Youngstown will come into possession of about 15 acres of land adjoining South Side Park. The land in question will make an excellent addition to the South Side Park, inasmuch as the greater part of it is covered with large trees, which will tend to make up for the inadequate shade the park now affords. With this addition, the park will comprise about 22 acres and can be converted into an ideal pleasure spot. The Park Commission has been desirous of procuring this portion of the realty company's land for some time, but owing to the figure at which it was held it was thought that the city could better do without for the time. The name of Williamson Park will be suggested to the Park Commission as a courtesy to Horace Williamson, who will be one of the donors of the land. Mr. Williamson has also done much toward advancing the civic conditions of that section of the city.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Disposal of Refuse—Contracts

City of New York vs. Paoli et al.—A contract by the Street Cleaning Department of New York City selling the privilege of picking over refuse at the city dumps is a valid exercise of power.—Court of Appeals of New York, 94 N. E. R., 1077.

Regulating Working Hours of Municipal Employees

In re Opinion of Justices.—The Legislature may, subject to constitutional limitations, control the counties, cities and towns of the State, and direct the method by which they shall conduct their public business, and it may restrict employees on public works to eight hours per day. Supreme Judicial Court of Massachusetts, 94 N. E. R., 1044.

Defects in Alley—Liability

Dallas vs. City of Concordia.—A city which knowingly permits a deep cellarway to remain open and unguarded in a public alley, a few feet from a principal street, is responsible in damages to one who in the darkness of night and without negligence falls therein.—Supreme Court of Kansas, 115 P. R., 558.

Personal Injuries—Obstructions—Cellarways

City of Lewiston vs. Isaman.—The provisions of the city charter expressly authorized the construction of cellarways and the placing of doors thereover, and it is the duty of the city to keep such doors, which are a part of the sidewalk, in repair, if the owner fails to do so, and assess the expense thereof to the abutting lot. The obligation and duty to keep the streets and sidewalks in a safe condition is placed by the provisions of its charter upon the city, and the city has been provided by said charter with authority and power to discharge such duty, and, in case it fails to perform such duty, the city is made expressly liable, under the provisions of the charter, for any damage to person or property.—Supreme Court of Idaho, 115 P. R., 494.

Sewer Assessments—Ordinances

Kirkpatrick vs. City of Dallas.—An ordinance providing that the cost of sewers shall be assessed to the property abutting on the streets where the same are laid and benefited thereby does not, at least clearly, indicate exercise of the power, under the city's charter, optional with the Council, to assess property adjacent to, as well as that abutting on, the streets in which a sewer is laid.—Supreme Court of Oregon, 115 P. R., 424.

Dedication of Streets—Acceptance

Wade vs. Town of Cornelia.—Where the owner of an acre of land located in a municipality subdivides the same into lots and streets, and dedicates the streets to public use, and the municipality accepts the dedication by working the streets and otherwise exercising control over them, the municipality acquires, for the benefit of the public, an easement in the use of the streets.—Supreme Court of Georgia, 70 S. E. R., 880.

Sewer District—Sufficiency of Ordinance

Williams vs. City of Caldwell.—Where a city ordinance declaring the intention of the Council to organize a sewer district and construct a sewer system states that "the character of the proposed lateral system shall be that of gravity and according to the plans and specifications now on file in the office of the city engineer," it is a sufficient compliance with the terms of subdivision 3, section 2353, Rev. Codes, which requires that the ordinance of intention shall state the "general character of the proposed sewerage system and sewerage disposal works." In such case the reference to the plans and specifications is sufficient to give notice to all parties interested of the general character of the proposed works.—Supreme Court of Idaho, 114 P. R., 519.

Grading Street—Injury to Building

Meyer et ux. vs. City of Rosedale et al. The measure of damages for injuries done to a building may differ according to the facts in each case. Under the evidence in this case the rule prescribed by the court that the amount of damage, if any, should be the cost of restoring the building to the same condition in which it was before the injury occurred is the correct rule.—Supreme Court of Kansas, 113 P. R., 1043.

Contract for Purchase of Voting Machines

Darling vs. City of Manistee.—Where a contract by a city for the purchase of voting machines required them to be returned to the seller if they did not comply with the conditions it must be deemed to have accepted them in full compliance with the warranties in the contract if it kept and used them, without complaint or offer to return, for three years after the contract was made, it being the city's duty to return them within a reasonable time if they did not comply with the contract.—Supreme Court of Michigan, 131 N. W. R., 450.

Supplying Water Outside of City

Steitenroth et al. vs. City of Jackson.—A municipality owning and operating a water works plant has no power to supply water to persons living outside the municipality, and such a power does not result by necessary implication from the power the municipality to supply water to its own citizens.—Supreme Court of Mississippi, 54 S. R., 955.

Defective Sidewalks—Gratings

Corry vs. City of Columbia.—Even if a city must so guard gratings in a sidewalk, reasonably necessary for adjoining buildings, that one wearing a small heel shoe or using a cane or crutch may not be endangered by a fall from the heel, cane or crutch going into one of the small openings, a corresponding duty must devolve on such pedestrians to exercise due care to avoid such danger.—Supreme Court of South Carolina.

Obstruction of Street by Railroad—Injunction

Town of Cheraw vs. Seaboard Air Line Ry.—An injunction, at the suit of a municipality against a railroad for obstructing a street, should not be granted where there is a prima facie showing that a side track used and claimed by the railroad was constructed within a right of way granted by the municipality, and where the existence of any nuisance is doubtful and has not been established by law, and where there has been an injunction in a suit between the defendant and a third party claiming to derive its rights from the municipality over the same obstruction.—Supreme Court of South Carolina, 71 S. E. R., 40.

Personal Injuries—Unguarded Trench

Robinson vs. Town of St. Matthews.—Under Civic Code 1902 a municipality is liable for injuries through a defect in a street occasioned by its neglect or mismanagement. The neglect alleged was in digging a ditch in a street to a depth dangerous to ordinary travel and leaving same uncovered and unlighted. Held, it was not error to fail to instruct that it is discretionary with a municipality to place permanent lights in a street, as the case presented not merely a failure so to do, but a defect in the street as a result of neglect in leaving an uncovered and unlighted ditch in a street.—Supreme Court of South Carolina, 71 S. E. R., 234.

Payment by Warrant

Hart et al vs. Village of Wyndmere et al.—The delivery by a village of its legal warrant in payment of a contract, providing for payment by it in cash, is payment of such contract obligation.—Supreme Court of North Dakota, 131 N. W. R., 271.

Change of Grade—Damages

Filer & Stowell Company vs. City of Milwaukee.—Under Milwaukee City Charter, providing that where the grade of a street has once been established, and the owner of any lot is injured by an alteration of the grade, he shall be entitled to compensation therefor; the grade of a street, once lawfully established, cannot be legally changed without proceedings for the determination of the damages and benefits.—Supreme Court of Wisconsin, 131 N. W. R., 345.

MUNICIPAL APPLIANCES

An Automatic Float-Switch

AN automatic float-switch of new design has recently been placed upon the market by the Westinghouse Electric & Manufacturing Company. The new design embodies several features that recommend it for the control of motors driving pumps that empty into reservoirs, or drain pumps, sewers, etc. The operation of the switch is entirely automatic and the mechanism requires no attention beyond an occasional inspection and oiling. The switch is operated by a cylindrical steel float which plays between brass stops on a vertical rod, as shown in the cut; the stops are adjusted to the upper and lower water levels. When the float presses against either stop a U-shaped tripping lever attached to the float rod engages a pivoted weight arm and carries it upward and around past the vertical position. The weight arm then falls, engages an arm on the switch drum shaft, and snaps the switch open or closed according to the direction in which the weight arm is thrown. A buffer receives the force of the weight arm's fall. When the float rod is attached to the tripping lever, as shown in cut, the pump will be started when the float presses on the lower stop and hence is properly arranged for filling reservoirs. With the rod attached to the other side of the lever, the switch is adjusted for drainage purposes, as the motor will be started when the float presses against the upper stop. The switch is of the drum type, with renewable contacts and fingers.

The float and float rod are heavily galvanized and are enameled and baked. This finish effectually prevents rust. The standard float rod permits maximum variations in levels of six feet.

These switches are made in two styles—double-pole for direct-current and single-phase alternating-current motors, and three-pole for polyphase motors. The maximum capacity is 50 amperes at 550 volts. The motor is connected directly across the line and hence can be used only with motors that do not require reduced starting voltage.

Liquid Asphalt Atomizer

J. E. WARD & Co., 781 Pacific Electric Building, Los Angeles, Cal., manufacture Ward's liquid asphalt atomizer, which is used for constructing oil

macadam, gravel or dirt highways, for top dressing and oil-sealing rock, gravel or dirt highways and for oil spraying to prevent dust.

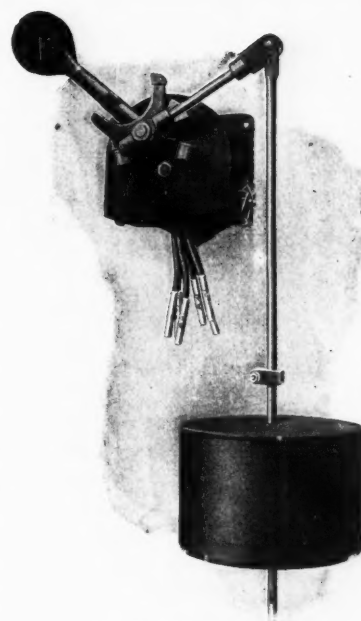
The difficulty which the machine is designed to overcome is mentioned in a recent report of the Los Angeles County Highway Commission, which reads as follows:

Our experience to date with the many gravity oiling machines in use has demonstrated the absolute necessity for uniformity in the application of oil and that this is the leading essential of good construction. It has been found that few if any of the present gravity oilers are capable of applying uniformly a quantity as low as a quarter of a gallon of oil per square yard and cover every particle of the road; also that the pressure in such oilers, being due only to the slight gravity head, is variable as the tank is emptied, which with change in temperature of oil results in considerable variation in rate of application. Frequently part of the openings will become clogged, leaving streaks in the work. It is also observed that the older oilers, having a width of only six feet, reach but a short distance beyond the wide gauge wagon being used, and unless the driving is perfect wagon wheels will lap on edge of previously oiled strip and pick up, or the second course of oil will fail to meet the first by a few inches. The slightest defect, streak or irregularity in oiling shows up after the road has been open to travel a few months and starts trouble, even though much care is given to "bucketing" and hand application to cover defects.

As a result of the past season's work, our specifications now require that all oil or liquid asphalt shall be applied with a machine which will apply the oil under pressure of not less than thirty pounds per square inch, and which is capable of perfectly coating every particle of the road with as small a quantity as one-eighth of a gallon per square yard. We also require that the oil distributor shall have a width of not less than eight feet. A temperature of 212 degrees Fahrenheit is required in applying.

The Ward machine is built in two different styles:

(1) With machinery mounted on a trailing wagon which is easily connect-



AUTOMATIC FLOAT-SWITCH

ed to any tank wagon or watering cart, and (2) with machinery mounted on the rear of a tank wagon.

The trailing rig consists of a rotary force pump operated by a gasoline engine, connected to the pump by a clutch; this allows the pump to be started or stopped at any time without shutting down the engine.

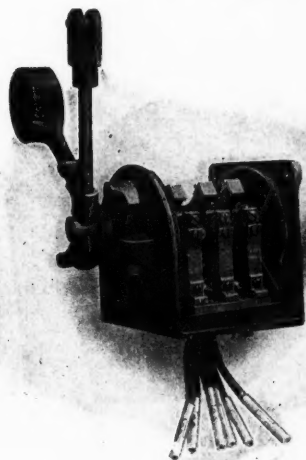
The suction pipe of the pump is connected to the tank wagon or watering cart by means of a flexible metallic hose.

The trailing wagon, on which the machinery is mounted, is provided with a short pole; this is hitched to the rear of the tank wagon, or watering cart.

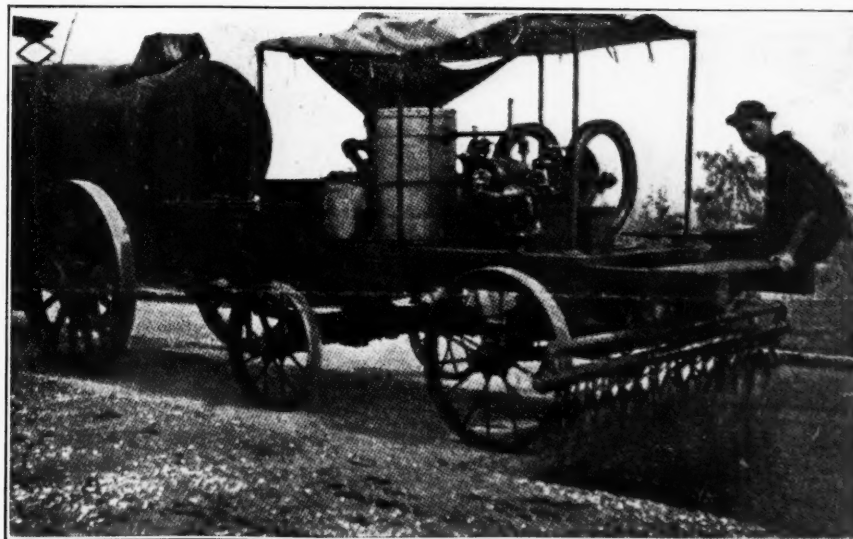
The pump draws the liquid from the tank wagon, which acts as a reservoir, and forces it through the nozzles of the distributor.

The liquid leaves the nozzles under a pressure of not less than 30 pounds per square inch, according to the amount being distributed; this is controlled by means of a by-pass between discharge pipe and suction of pump.

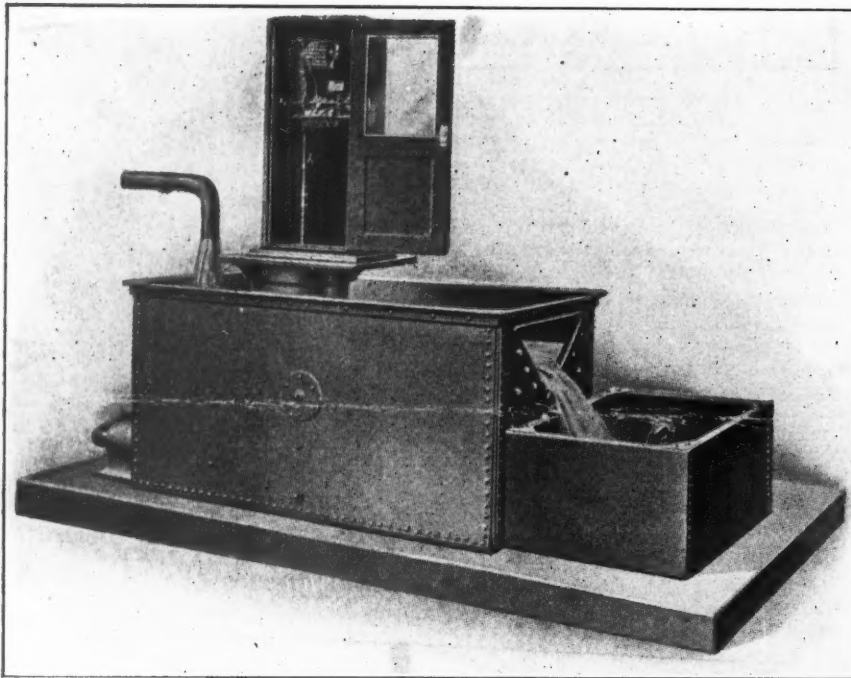
The nozzles are individually controlled; this allows a greater variation in width of surface being treated, and has proven very useful in preventing waste of material from overlapping,



INTERIOR OF SWITCH



WARD'S LIQUID ASPHALT ATOMIZER



SIMPLE DEVICE FOR MEASURING FLOW OF WATER

often caused by uneven driving, as well as the impossibility of regulating the width of distribution when the nozzles are controlled in series.

In the combination rig, shown in the illustration, the atomizing machinery is mounted on the rear of a tank wagon. This outfit is of special value where the liquid material does not have to be hauled a great distance. While light oils are used for dust laying this rig is to be preferred, or in any case where only one tank wagon is required to do the work.

The distributor is built in any width from 6 up to 10 feet, and any width of distribution can be obtained, varying by inches from two feet up to the maximum width. The distributor is easily disconnected from the discharge of the pump, so that it is out of the way when moving from one locality to another.

The quantities which the manufacturers state can be distributed vary from a minimum of $\frac{1}{8}$ gallon of heavy asphaltic oil, carrying 85 per cent of asphaltum, to a minimum of 1-12 gallon of oil carrying 60 per cent asphaltum up to a maximum of one gallon in each instance.

Outside Guided Triplex Power Pump

The illustration of an outside guided triplex power pump is of the type supplied by W. & B. Douglas, Middletown, Conn., for the city of Norwich, Conn., under interesting circumstances. An emergency arose in connection with the Norwich water supply and additional pumping capacity was needed at once. The order was placed December 10, and on the following day a large triplex pump was shipped. Later on December 27 and January 7 two direct connected outfits were shipped as part of a permanent installation. The firm of W. & B. Douglas, by the way, are said to be the oldest pump makers in the world. For the past fifteen years, however, they have given special attention to power pumps suitable for small towns and private water works.

The pumps are made with plungers 8 inches in diameter and 10-inch stroke

(or smaller), 42 revolutions per minute, 273 gallons capacity, suction 5 inches, discharge 4 inches. The specifications for the pump follow:

Frame—Close grained iron cast in one piece with cylinders and guides making very rigid construction, and insuring constant alignment of working parts.

Crank Shaft—Open hearth steel casting of high tensile strength, accurately machined and polished on bearing surfaces.

Bearings—Crank shaft, pinion shaft and marine type pitman heads, best quality of babbit metal, alignment secured by special jigs.

Gearing—Close grained cast iron, machine-cut from the solid—a gear guard covers the pinion and adjacent teeth of the gear. Ratio of gearing, 5 to 1; several other ratios can be furnished by special arrangement at reasonable extra charge.

Connecting Rods—Have marine type pit-

man heads. Strap head and wedge adjustment with bronze boxes at crank end furnished to order at reasonable additional charge. Bronze bushings at plunger end in all types.

Cylinders—Close grained iron, cast with housings or frame in one piece.

Plungers—Close grained cast iron, unless otherwise ordered.

Glands—Sizes up to and including 5" x 8" have screw type bronze glands, making binding impossible—larger sizes have bolted iron glands unless otherwise ordered. All are easy of access for adjustment and repacking.

Base and Valve Boxes—Close grained cast iron—large valve areas and ample, direct water ways—valves are all under front cover and easy of access.

Valves—Discs selected from proper mixture of rubber for cold water according to pressure, seating on bronze grids with cylindrically-wound phosphor bronze springs to ensure prompt closing. For hot water, bronze metal valves ground to seats unless otherwise ordered.

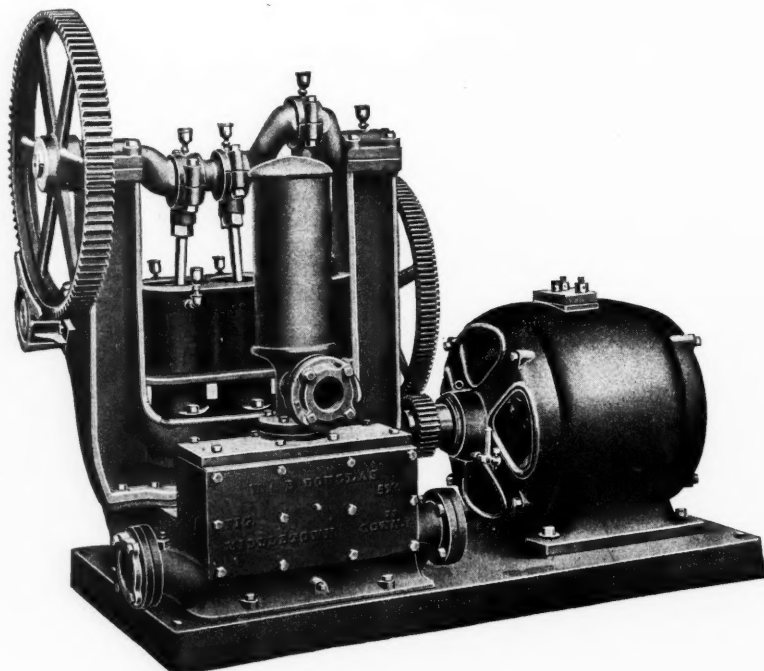
Air Chamber—Cast iron, thoroughly tested and of ample proportions—supplied with pump. Vacuum chamber to order.

Oil Cups and Wrenches—Supplied with pump; also special socket wrench to remove valve-stems and grids. Grease-cups, at same price, if preferred.

Special Construction—Phosphor bronze plungers. Bronze lined cylinders and glands. Rawhide or fiber pinion, etc., to order.

Water Flow Recorder

THE Lea water flow recorder shown in the illustration has been placed on the market by the Yarnell-Waring Company, 1109 Locust street, Philadelphia, Pa., for measuring the flow of water for boilers, from condensers, pump discharges, sewers and streams. The basis of measurement is simple because the flow from the outlet is directly proportioned to the head. The float is protected from disturbance by waves in the tank, as it is enclosed in a cylinder provided with suitable openings. The recording device is of an ordinary pattern. The recorders are said to be accurate to within $1\frac{1}{2}$ per cent by weight. The average error due to variations in temperature over a range of 50 degrees Fahrenheit does not exceed 0.5 per cent.



TRIPLEX POWER PUMP

NEWS OF THE SOCIETIES

American Society of Civil Engineers.—The forty-third annual convention of the society was held at Chattanooga, Tenn., June 13 to 16. More than one hundred members attended the meeting, a large proportion of them being from the Southern States. The first session was held in the assembly room of the Patten Hotel, where Mayor Thompson made the address of welcome. The reading of formal papers never is a conspicuous feature in the annual conventions of this society, and, as usual, the social entertainments took up most of the time not occupied by the business meetings. The Mayor mentioned the engineering work done during the Chattanooga campaign of the Civil War. As indicating one advance in engineering he said he supposed no engineer present would follow the plans of General Grant, who during the Peninsular campaign threw up the dirt on the inner side of the trenches. President Endicott in his annual address gave a brief historical sketch of the society. He mentioned the development of Chattanooga since the society met there twenty years ago. He alluded to the march of progress during the century and believed that there was never a step taken that an engineer was not in the van. "One of the definitions of civil engineering," said he, "is 'the construction of works of public utility,' and you will see that this definition applies fairly well to all branches of engineering. I like it better than I do some of those more labored which have been proposed from time to time, and you know there have been many fruitless efforts to find one that is short, comprehensive and correct. It expresses the result, for everything that the engineer does is directly or indirectly the production of works for the convenience, wealth, comfort, health, safety or happiness of mankind. If he destroys anything it is only that something better for the public may be constructed or established in its place. What a privilege, what an opportunity, is presented in these days for taking part in the accompaniment of these great public utilities."

The afternoon was spent on Lookout Mountain. There was a basket dinner prepared by the ladies of the local entertainment committee, served at the base of the New York monument. In the evening George E. Rowell, assistant engineer in charge of the work, gave an illustrated lecture on the lock and dam of the Chattanooga and Tennessee River Power Company.

Thursday, the second day of the convention, was taken up with an all-day excursion to the locks and dam at Hale's Bar in the Tennessee River, which furnished the subject of the lecture on the evening before. A special train left the Union Station early in the morning with about one hundred members of the society and about forty ladies. Colonel Bogard, chief engineer, was assisted in caring for the party by E. C. Lewis, chairman of the board of directors, and Chief Engineer Hunter McDonald, of the Nashville, Chattanooga & St. Louis Railway. After reaching Hale's Bar two steamboats were used in transporting the party to the west side of the river. The locks, which have recently been finished, were first inspected. About one-third of the dam has been finished, and this proved very interesting to the engineers as well as the large centrifugal pumps.

The power house was visited while the last roof truss was put in place. Altogether, nearly 1,800 men were at work in the construction. The contracting firm, Jacobs & Daines, served a lunch to the guests. In the evening there was a reception and dance in the Hotel Patten.

On Friday, the last day of the convention, the members divided into several parties. Some visited the Dixie Cement Works, Richard City, Tenn. More than fifty visited the Chattanooga water works. L. H. Bixby, resident manager of the company, was in charge of the party. After inspecting the plant a picnic was served in the grove. After luncheon a golf tournament was held at the Chattanooga Golf and Country Club.

North Carolina Good Roads Association.—The annual meeting was held at Winston-Salem June 15. The following officers were elected: H. B. Varner, president; Dr. J. H. Pratt, secretary; J. G. Brown, treasurer. As vice-presidents one member from each Congressional District was elected as follows: R. R. Cotten, of Bruce; J. L. Patterson, of Roanoke Rapids; R. L. May, of Trenton; M. C. Winston, of Trenton; P. H. Hanes, of Winston-Salem; E. MacEartham, of Wilmington; Leonard Tufts, of Pinehurst; P. B. Beard, of Salisbury; F. M. Shannnonhouse, of Charlotte, and E. C. Chambers, of Asheville.

C. H. Moorefield, United States Office of Public Roads, read a paper on "Sand-Clay Roads," which he recommended on account of low cost of construction and maintenance as well as their good qualities as roadways. He advised the construction of sand-clay roads in preference to macadam wherever the soil would admit of it. A. D. Batchelder, representing the American Organization of Automobileists, said that the organization of a State automobile association would do more to promote good road building than anything else. A paper by P. D. Gold, Jr., Raleigh, on "State Security for County Bonds" was read and ordered printed.

The opening of a question box and the discussion over the problems propounded was a feature of interest. It was the general sense of the assembly that State convicts should be taken off the farms and placed on the public roads; that each county requires a road engineer; that Beaufort, with its soil, should build sand-clay and not macadam roads.

Much of the practical work of the meeting was expressed in a series of resolutions, among which were the following: That Federal aid in road building be favored; that convicts be not leased to corporations, but employed on county roads; that the State should appropriate \$1,000,000 annually for roads; that those interested in the construction of highways make tours of inspection at such intervals as the promoters of each highway consider advisable; that county good roads associations be formed; that the Legislature be asked to establish a State Board of Trade.

A tour of inspection of the roads of Forsyth County was made and the members of the association witnessed a demonstration of Tarvia by the Barrett Company under the direction of its representative, Mr. Devine. The demonstration was made on about 75 feet of the road in front of Piedmont Park.

South Carolina Water Works Association.—The following program for the first annual convention to be held at Columbia, June 28-29, has been issued:

Wednesday, June 28, 3 P. M.

Call to order and introductory remarks, W. F. Stieglitz, Council Superintendent Columbia Water Works.

Address of welcome, Hon. W. H. Gibbes, Mayor of Columbia.

Response, Hon. Kenneth Baker, Mayor of Greenwood.

Election of temporary chairman.

Appointment of Committee on Organization.

Enrolling membership, active and associate.

Discussion on Advantages and Benefits of a Tri-State Organization, by Superintendent Figg of Savannah, Neave of Salisbury, McLure of Anderson, Ferguson of Augusta, Moffett of Charlotte, Barnwell of Yorkville, Barrow of Athens, Jones of Fayetteville, Easterling of Union.

Election of officers for the ensuing term.

Address on Relation of Water Supply to the Public Health and the Danger in the Use of Well Water. Dr. Wm. A. Boyd, Health Officer, Columbia.

General discussion, resolutions, etc.

Adjourn at 5.30 p. m. for refreshments at Irwin's Park and display of the Columbia Water Works.

8.30 P. M.—Address on Columbia's Water Supply, Past, Present and Future, Dr. J. W. Babcock, Superintendent State Hospital for the Insane.

Address on Relation of the Local Organization to the National Association, J. M. Diven, secretary American Water Works Association.

General discussion.

Thursday, June 29, 9.30 A. M.

Address on Ozone Treatment of Water, R. S. Mebane, president Republic Cotton Mills, Great Falls, S. C.

Short talks by representatives of water works supply houses and manufacturers.

Selection of next place of meeting.

New business and adjournment.

Information.

Firemen's tournament will be in progress during our meeting.

Hand reel and horse hose wagon races will be run on 28th and 29th.

A display of automobile fire apparatus will be made by the Columbia Fire Department.

Columbia's crack baseball team will battle with Charleston on 28th and 29th.

The arrangements for the entertainment of the visitors contemplate, in addition to the trip to Coney, automobile rides for the women members of the party Wednesday afternoon through the county parks and Friday morning to the suburbs. There will also be a theater party Wednesday night.

Society of Engineers of Rensselaer Polytechnic Institute.—The following officers have been elected: President, W. W. Rousseau, '95, Troy; vice-president, J. I. Shankley, '72, Haverstraw, N. Y.; treasurer, Frederick A. Burger, '13, Welland, Ontario; corresponding secretary, James A. Ryan, '13, New York; recording secretary, Wallace S. Shutz, '14, Marshall, Minnesota; librarian, Paul M. Kuder, '14, Seigfried, Pa.; trustees, J. A. Powers, '80, Troy; Virgil H. Heines, '81, New York; Ralph H. Chambers, '93, New York; Arnold H. Stutermeister, '94, Albany; Thomas H. Harvey, '98, Long Island City.

Rochester Engineering Society.—The annual meeting and election of officers of the society took place June 9 at Reynolds Library. The reports of officers were read, showing the society to be in a flourishing condition. The report of the secretary-treasurer showed an increase of 22 members in the past year and \$1,102.91 in the treasury. The society has now 236 members.

The result of the election was as follows: President, H. Y. Norwood of the Taylor Instrument Company; first vice-president, H. W. Peck, Rochester Railway & Light Company; second vice-president, D. P. Falconer, New York State Railways; secretary-treasurer, Edward F. Davison, Rochester Electric Motor Company.

Mayors' Club of Massachusetts.—The annual meeting was held in Holyoke, June 12-13, the first meeting ever held outside of Boston. Trolley cars were provided and the guests, numbering about 40, were taken to Mt. Tom, where a banquet was given at 4 p. m., after a brief business session. Each guest was given an attractive souvenir program and menu. The book contained pictures of the first mayors' club of Massachusetts, the City Hall, Summit House on Mt. Tom, public library, State armory, post office, City Hospital, views of the Connecticut River, canals and the Holyoke dam. After the banquet a visit was made to Brightside. The second day was given to visiting points of interest in and about the city, including factories and municipal plants. An automobile sightseeing tour was made. In the afternoon the party attended the theatre. Each of the ladies attending the gathering was given a box containing samples of Holyoke products, stationery, silk goods, etc. The only formal address during the meeting was that of Rev. Dr. John S. Lyon, who described the great growth of cities as compared with country districts. He challenged the statement that the greatest problems in democratic government are in the cities.

Commission Government Mayors of Illinois.—Mayors of fifteen Illinois cities now ruled under the commission form of government met in the National Hotel at Peoria recently for the purpose of forming a permanent organization by which they hope to solve the present commission form of government law in a uniform manner, thereby preventing a difference in interpretation of its various clauses in different cities. The meeting was called to order by Mayor Martin R. Carlson, of Moline, who originated the idea of a permanent organization, and the Mayors of the following cities were present: Braceville, Carbondale, Decatur, Dixon, Elgin, Hillsboro, Jacksonville, Kewanee, Pekin, Rock Island, Springfield, Spring Valley, Waukegan, Rochelle and Moline.

Louisiana State Firemen's Association.—At the convention, Covington, La., May 27, the following officers were elected: J. T. Heaney, New Orleans, president, by a majority of 28 votes over R. B. Stone, Gretna; William Holmes, of Bogalusa, vice-president; William Kleinpeter, Gretna, secretary; Sidney Brown, Opelousas, treasurer, and J. C. Gibbs, Winnfield, statistician; Jacob Feller, Covington; S. Mouton, Lafayette, delegates to National Association; Chris O'Brien, of Shreveport, delegate to the International Association of Fire Engineers. Plaquemine secured the 1912 convention.

Society for the Promotion of Engineering Education.—The Tuesday and Wednesday sessions of the Pittsburg meeting, June 27-29, will be held at the School of Applied Science of the Carnegie Technical Schools. Thursday's sessions will be held at Thaw Hall of the University of Pittsburg. The papers to be presented are announced as follows: "Teaching English in Technical Schools," Prof. S. C. Earle, Tufts College; "The Preparation of Written Papers in Engineering Schools," Prof. F. N. Raymond, University of Kansas; "The Use of Logarithmic Diagrams in Laboratory Work," H. A. Gehring, Department of New York State Engineer; "Highway Engineering," Prof. H. H. Blanchard, Brown University; "Balance of Courses in Chemical Engineering," Dean C. H. Benjamin, Purdue University; "Chemical Education for the Industries," Prof. J. H. James, Carnegie Technical Schools; "All-Year Sessions, Individual Instruction: Renewed Suggestions," Dean W. G. Raymond, University of Iowa; "The Architecture of Engineering Schools," Prof. J. M. White, University of Illinois; "The Wentworth Institute," A. L. Williston, Director Wentworth Institute; "An Engineering Course for Underclassmen," Profs. W. A. Hillebrand and S. B. Charters, Jr., Stanford University; "Electrical Engineering Instruction," Prof. E. B. Paine, University of Illinois; "Teaching of Scientific Shop Management, with Use of Engineering School Shops as the Laboratory," Profs. H. Wade Hibbard and H. S. Philbrick, University of Missouri; "Technical Training from the Business Man's Standpoint," E. B. Raymond, vice-president Pittsburgh Plate Glass Company; "Adapting Technical Graduates to the Industries," C. F. Scott and C. R. Dooley, Westinghouse Electric and Manufacturing Company; "Co-operative System of Engineering Education at the University of Pittsburg," Dean F. L. Bishop, University of Pittsburg. Committee reports: "Teaching Mathematics to Engineering Students," Prof. E. V. Huntington, Harvard University; "Entrance Requirements," Prof. J. J. Flather, University of Minnesota, chairman. Presidential address on "The Engineering Teacher and His Preparation," A. N. Talbot.

Calendar of Meetings

- June 27-29.
Northwestern Indiana Volunteer Firemen's Association.—Annual Convention, Winchester, Ind.—Chief Guy Way, Winchester, Ind.
- June 27-July 1.
American Society for Testing Materials.—Fourteenth Annual Meeting, Hotel Traymore, Atlantic City, N. J.—Edgar Marburg, Secretary, University of Pennsylvania, Philadelphia, Pa.
- June 28-29.
South Carolina Water Works Association.—Meeting for Organization, Columbia, S. C.—W. F. Steiglitz, Temporary Secretary, Columbia, S. C.
- June 28-30.
International Association for the Prevention of Smoke.—Annual Convention, Newark, N. J.—R. C. Harris, Secretary, City Hall, Toronto, Ont.
- July 3-8.
South Dakota State Firemen's Association.—Tournament and Convention, Lead, S. D.—Charles P. Coolidge, Lead, S. D.
- July 21-23.
Wisconsin State Firemen's Association.—Annual Convention, Fort Atkinson, Wis.
- July 25-26.
Western New York Firemen's Association.—Convention, Springville, N. Y.
- July 25-28.
Iowa Firemen's State Association.—Tournament, Des Moines, Ia.—N. J. Francis, Secretary, Des Moines.
- July 25-28.
American Acetylene Association.—Annual Convention, Atlantic City, N. J.

PERSONALS

BARCLAY, W. F., who has been Superintendent of Parks of Wilkes-Barre, Pa., for the past five years, has tendered his resignation.

CHAPMAN, P. P., has been elected Mayor of Manassas, Va.

EGAN, CHARLES, has been appointed Deputy City Treasurer of Oklahoma City, succeeding C. L. Butler, resigned.

GERHARDT, LOUIS, Mayor of Terre Haute, Ind., is making an extended Eastern automobile trip to get ideas and approve final specifications for a 1912 automobile fire and police apparatus. The trip will include visits to Boston, New York, Atlantic City, Harrisburg and Pittsburg, and is in the nature of a machine test, as Terre Haute proposes to supplant horses with motor cars in the city Police and Fire Departments before the expiration of three years.

FARNHAM, FREDERICK W., ex-Mayor of Louisville, Ky., has been appointed Assistant Engineer in the office of the City Engineer.

FISHER, E. A., City Engineer of Rochester, N. Y., delivered a lecture last week on "The Care and Paving of Streets" before the Board of Trade of Williamsport, Pa.

FOSTER, SAMUEL D., of Pittsburg, has been appointed Chief Engineer of the State Highway Department. Under the new road law the Chief Engineer must be a competent civil engineer and experienced in the building and maintenance of improved roads. Mr. Foster is now the Road Engineer of Allegheny County, a position he has held since 1909. He has had much experience in road building, and, it is said, was recommended by Highway Commissioner Bigelow. He is a graduate of Washington and Jefferson College.

MARKER, JAMES R., of Celina, Ohio, has been appointed Highway Commissioner by the Governor. Mr. Marker has been Chief Engineer of the Board of Public Works. He takes the place of James C. Wonders.

NISSELY, J. E., is the new Mayor of Guthrie, Okla.

OLVANY, GEORGE W., an attorney-at-law, has been appointed Deputy Fire Commissioner for the boroughs of Manhattan, the Bronx and Richmond.

ROHDE, JACOB, has been appointed Chief of the Fire Department of Atlantic Highlands, N. J.

SCHERER, BENJAMIN J., of Milwaukee, has been appointed a member of the fire and police commission for four years to succeed Michael Carpenter.

SHEPPERD, W. H., has been elected mayor of South Boston, Va.

SHIELD, E. SOUTHARD, is the new mayor of Lexington, Va.

STETSON, FRANK L., a prominent lumber manufacturer and for thirteen years chief of the fire department of Minneapolis, has been appointed chief of the Seattle fire department to succeed John Boyle, resigned.

VAN LAKE, CHARLES, former sanitary officer for the city health department of South Bend, Ind., has been promoted to the office of city food inspector to succeed John T. Willett, resigned to become a state food inspector.

WEGNER, ERNEST, has been appointed Chief of Police of Galveston, Tex.

WHEELER, PROF. E., has been appointed Mayor of Montesano, Wash., to succeed Mr. Durdle, resigned.

WREN, G. J., has been elected Mayor of Modesto, Cal.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago: Market is quiet. Quotations: 4-inch, \$25.50; 6 to 12-inch, \$24.50; 16-inch and up, \$24. Birmingham: Quite a number of inquiries for large lots of water pipe have been received, mostly from the Coast and Central West, all of which will, it is thought, result in new business. Quotations: 4 to 6-inch, \$22.50; 8 to 12-inch, \$22; over 12-inch, \$21. New York: Very few public lettings are coming out, and the demand from private buyers has again subsided to small proportions. Quotations: 6-inch, carloads, \$21 to \$22.

Lead.—While the demand for lead is not heavy the market has an upward trend and outside sellers are now demanding the price that the syndicate has held to since early in the year, which is 4.50c New York and 4.35c St. Louis.

Pumping Engine.—The Finance Committee of the Atlanta (Ga.) City Council has decided to recommend the acceptance of the proposition made by the Holly Manufacturing Company, of Buffalo, N. Y., which is to furnish two new cylinders for the water works pump at the river station at a cost of \$4,400. The city had entered suit against the company for \$8,500 on the ground that the two cylinders were defective, which caused them to crack. But the company contends that the city forced the pump to do extra duty above what the specifications required.

High-Pressure Pumps.—According to the New York Dept. of Water Supply, overdraft on the pumps was responsible for the water shortage during the Dreamland fire. In response to a request from W. E. Dickey, vice-president of the Goulds Manufacturing Company, Seneca Falls, N. Y., which supplied the pumps for the high-pressure fire service at Coney Island, Deputy Water Commissioner J. W. F. Bennett has written him a letter to this effect: "Mr. Dickey told the Department of Water Supply that the reputation of his firm had been damaged because, just after the Dreamland fire Fire Chief Lally gave out an interview criticising the high-pressure service. In answer, Deputy Commissioner Bennett said: 'The three high-pressure fire service gas-engine-driven pumps at the Coney Island station worked satisfactorily during the Dreamland fire. The overdraft on the pumps necessarily resulted in the reduction in pressure shown on the charts.'"

Motor Steam Fire Engine.—The Nott Fire Engine Company, Minneapolis, Minn., are constructing for the city of Bridgeport, Conn., a gasoline-propelled steam fire engine like that put in commission in New York City a few months ago. The engine will be delivered some time during the summer and will answer all alarms.

Industrial Development of City.—President C. A. Adams of the Cleveland Chamber of Commerce, Cleveland, Ohio, has appointed a new committee on industrial development, which will gather data regarding the industries of the city and determine new industries that are needed. The work of the committee in the past year brought some new manufacturing plants to the city. D. T. Croxton, president of the Cleveland Furnace Company, was reappointed chairman of the committee.

Spiral Riveted Steel Pipe.—The American Spiral Pipe Works, Chicago, Ill., have recently made some important extensions to their line of manufacture, and have greatly increased their facilities and have established one of the largest and most complete lines of piping in the country. In connection with their 3-inch to 42-inch spiral riveted pipe, they are now in position to furnish lap welded pipe from 12 inches to 72 inches in diameter up to 1 1/4 inches in thickness, and a number of types of forged steel connections have been added to meet each particular requirement.

Water Works Supplies.—It is said that the H. Mueller Manufacturing Company, Decatur, Ill., is contemplating the establishment of a Canadian branch factory at Port Arthur, Ont., for making plumbers' brass goods and water works brass fixtures.

Steel Manufactures.—The Carnegie Steel Company on July 1st will take possession of the warehouse and stock of the Bassett-Presley Company, Cleveland, Ohio, and will conduct a general jobbing business from that city. For the past few months the Carnegie Company has been doing some jobbing business in the Cleveland territory, making deliveries from its Pittsburg warehouse. The Bassett-Presley warehouse will be enlarged considerably, the Carnegie Company having acquired adjoining property for that purpose, as more room is needed for structural material, which the Bassett-Presley Company did not carry in stock. The warehouse stock of the Carnegie Company will include bars, plates, shapes, sheets and possibly other products. The Bassett-Presley Company will retain its name and will probably continue in business along other lines, although its plans have not yet been decided upon.

Reinforced Concrete Pipes.—Paruly & Wethercut, successors to Walter C. Paruly, Everett Building, New York, have issued a pamphlet describing and illustrating their system of reinforced concrete sewers, conduits, manholes and tunnels. They are built of concrete segments or blocks, hardened before laying. They are reinforced in rabbeted form of joints as they are built in place in trench. Reinforcement is also embedded in the blocks.

Announcement.—On June 1, 1911, the Fort Wayne Electric Works will be merged with the General Electric Company of Schenectady, N. Y. Its business will be conducted under the name of Fort Wayne Electric Works of General Electric Company. The same lines of apparatus and supplies will continue to be manufactured and sold under the immediate direction of the same individuals as heretofore, with Mr. F. S. Hunting in responsible charge as general manager. All correspondence should be sent to the Fort Wayne Electric Works at the same addresses as in the past. Bills and statements will be rendered from Fort Wayne, Ind., and all remittances should be made to Fort Wayne Electric Works, Fort Wayne, Ind. All outstanding contracts and other obligations of the Fort Wayne Electric Works will be carried out by the new organization. The offices of the Fort Wayne Electric Works of General Electric Company will be continued as heretofore.

Testing Cement.—The Universal Portland Cement Company, Chicago, Ill., has published in pamphlet form the standard specifications and uniform methods of testing and analysis for Portland cement, embracing the report of the committee on standard specifications for cement of the American Society for Testing Materials; the report of the committee on uniform tests of cement of the American Society of Civil Engineers, and the report of the committee on uniformity in technical analysis for limestones, raw mixtures and Portland cements of the Society for Chemical Industry, New York Section.

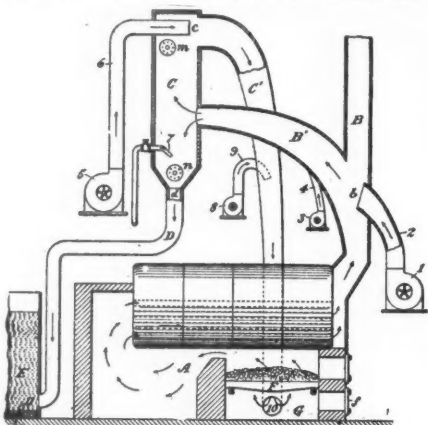
Empty Cement Sacks.—It is reported that the railroads west of Chicago will put in effect a new rule obliging railroad agents to refuse to accept a shipment of empty cement sacks unless they are properly bundled and tagged. East of Chicago this ruling has been in effect some time. West of Chicago, however, it has been the custom to charge double rates for poorly bundled shipments. The rules governing shipments are as follows: Each bundle of sacks shall be securely tied with not less than three separate wire ties, or three separate ties of rope, the latter to be at least 3-16 of an inch thick. Each bundle shall be marked with a linen tag showing the name and address of shipper and consignee, the tag to be securely fastened to the bundle by wire. Freight must be completely prepaid.

Consulting Engineers.—George W. Fuller, hydraulic and sanitary engineer, announces that he has associated with him as partners James W. Armstrong, James C. Harding and James R. McClintock, all of whom were formerly on the staff of Hering & Fuller. Mr. Armstrong had more than a dozen years' experience in general engineering practice, especially in railroad and structural iron work, and then for ten years he was on the staff of George G. Earl, General Superintendent Sewerage and Water Board, New Orleans, La., first in charge of the design of nine sewage pumping stations and later in the immediate charge of the design and construction of the New Orleans water purification plants and appurtenances. Recently he has had immediate charge for Hering & Fuller of the design of water purification plants for Grand Rapids, Mich.; Minneapolis, Minn., and Montreal, Province of Quebec. Mr. Harding spent some five years as assistant to Ernest Bowditch, and then for ten years was Assistant City Engineer of Pittsfield, Mass., in charge of the construction and operation of the sewerage system, sewage pumping station and sewage disposal works. Since 1907 he has been with Hering & Fuller, principally on sewerage work, and has had immediate charge of the design of sewerage and sewage purification works for a number of cities, and of investigations of typhoid fever epidemics. Mr. McClintock has been for the past five years with Hering & Fuller, partly on designing and partly on outside work, particularly with reference to water works appurtenances and the construction of water filters. He was resident engineer of the water filtration plant of Burlington, Vt., and at present is in charge of extensive improvements to the water works and sewerage systems of Clarksburg, W. Va. The offices of Mr. Fuller and his associates will be at 170 Broadway, New York City.

PATENT CLAIMS

995,765. SMOKE-CONSUMING FURNACE. Bernard F. Brady, New York, N. Y. Serial No. 578,279.

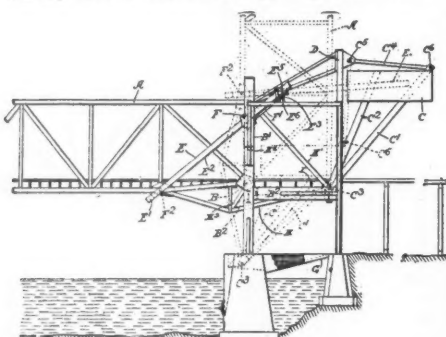
In combination with a furnace having an ash-pit and grate bars, smoke-flue B, eduction pipe 2 provided with projection b communicating with said smoke-flue B, separating-tank C, smoke-flue B' connecting said smoke-flue B with said separating-tank C, eduction pipe 4 communicating with said smoke-flue B', eduction pipe 6 provided with projection c, communicating with said separating-tank C, water jet 7 communicating with said separating-tank C, water-tank E, pipe D leading from said separating-tank C to said water-tank E, passage C' leading from said separating-tank C to the ash-pit below the grate bars,



eduction pipe 9 communicating with said passage C', said eduction pipes 2 and 4 being in communication with means for forcing the smoke and heavy unconsumed products of combustion through said smoke-flue B' into said separating-tank C, said eduction pipes 6 and 9 being in communication with means for forcing the smoke proper from said separating-tank C through said passage C' respectively into said ash-pit below said grate bars, and said water jet 7 being in communication with water supply for the purpose of forcing the heavy unconsumed products of combustion from said separating-tank C through said pipe D into said water-tank E, substantially as described.

995,813. BRIDGE. Joseph B. Strauss, Chicago, Ill., assignor to The Strauss Bascule and Concrete Bridge Company, Chicago, Ill., a Corporation of Illinois. Serial No. 292,208.

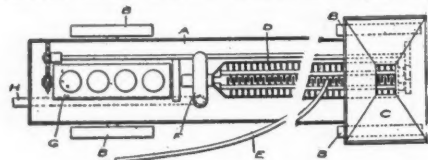
A bridge comprising a movable section, a counterweight therefor, a supporting device for the counterweight extending upwardly above the roadway, a pivotal con-



nection with the arc shaped recess in the disk, and adapted when within said recess to hold the retracting spring under tension, and time mechanism for actuating said rotatable device.

995,446. METHOD OF SNOW DISPOSAL. Cadwallader Evans, Jr., Pittsburg, Pa. Serial No. 615,557.

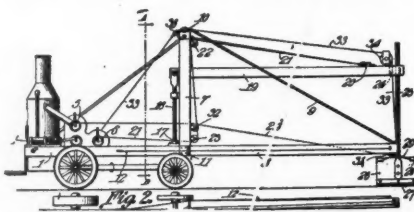
The method of removing snow from city streets comprising the following steps: 1st,



gathering the snow; 2nd, agitating the same; 3rd, forcing the agitated mixture to a distant point.

992,359. TRENCH-FILLING MACHINE. Carlos A. Kenney, Hammond, Ind. Serial No. 555,692.

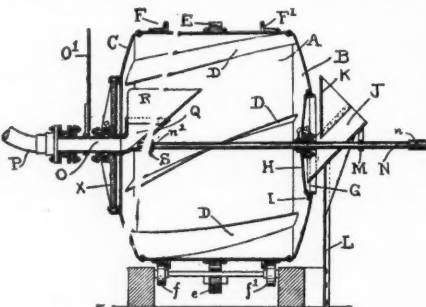
A machine of the class described including a portable structure, a scraping blade carried thereby, means for adjusting the



blade vertically, adjustable side members and means connected to said members for shifting the blade laterally therebetween.

995,422. APPARATUS FOR MIXING AND DELIVERING CONCRETE AND THE LIKE MATERIALS. St. John Clarke, Bogota, N. J., and Rudolph Welcker, Yonkers, N. Y. Serial No. 599,231.

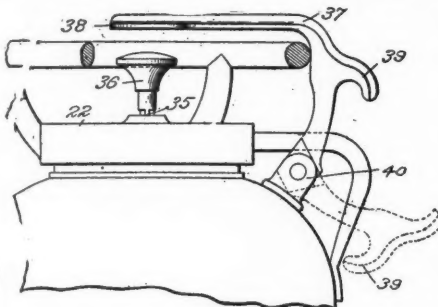
In an apparatus for handling concrete and the like materials, the combination of a closed mixer casing having a discharge port, with a hopper within and inclosed by



the mixer casing, and having its discharge end communicating with said port, and means for injecting a stream of air directly into the outlet of said hopper and directing said air toward the discharge port, said casing having means for feeding concrete toward the hopper.

995,883. FIRE-EXTINGUISHER APPARATUS. Harry M. McCaslin, Elmira, N. Y., assignor to American-La France-Fire Engine Company, Elmira, N. Y., a Corporation of New York. Serial No. 499,807.

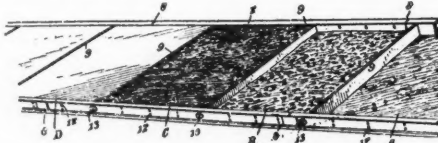
In a fire extinguisher, the combination with the operating member; of a guard member therefor movable into and out of



protecting position and having a hanger portion by which the extinguisher may be hung upon a suitable support to thereby maintain the guard member in protecting position.

995,620. KNOCKDOWN METAL FORM FOR CONCRETE SIDEWALKS. Harry M. Naugle, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Serial No. 562,464.

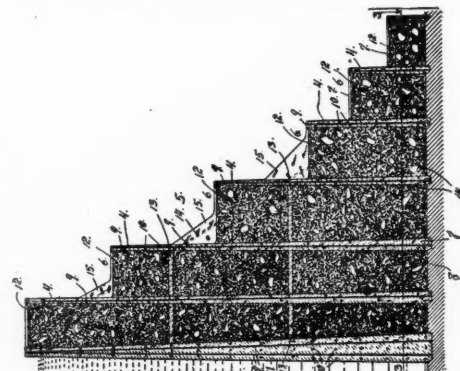
In a device of the character described a side piece and a division plate adapted to be locked to each other by a wedge, and a spring wedge for connecting said piece



and plate, said wedge formed of a plate of metal bent upon itself with its sides spaced from each other adjacent the bend and the free ends lying close together to form the thin end of the wedge.

994,666. DAM CONSTRUCTION. George J. Bancroft, Denver, Colo. Serial No. 571,562.

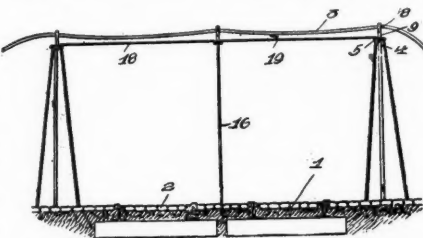
A dam consisting of a number or rows of cells or chambers, the walls of which are thickest at the base of the dam and



gradually decreasing in size toward the top, and a suitable filling contained within the said cells or chambers to form a solid mass of the dam, substantially as described.

995,940. HOSE-BRIDGE. John J. Armstrong, Pittsburg, Pa. Serial No. 583,409.

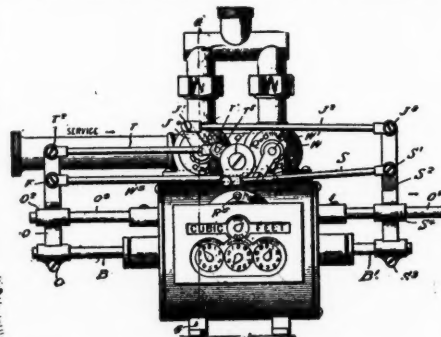
A hose bridge comprising a pair of outer supporting members and an intermediate supporting member, each of said members being provided with a head, a pair of legs supporting the head of the intermediate member, a series of legs supporting the heads of each of the outer members, each of said outer members further comprising a vertically-disposed yoke having a relatively long shank depending centrally therefrom and formed with a reduced end extending through the head of said member, means



engaging the reduced end for securing the yoke to the head, each of said yokes having the inner face of each of its arms cut-away to provide a recess, a vertically-disposed removable bearing mounted in each of said recesses, a bearing roller having reduced ends journaled in said bearings and positioned above the bottom of the yoke, and means for pivotally connecting the legs to the head, and the members having angle-shaped ends depending in the heads for supporting and connecting the supporting members together.

995,278. WATER AND GAS METER. James J. Mulhall, Albany, N. Y. Serial No. 583,478.

A gas and water meter comprising a cylinder with apertures in the ends thereof and having a plurality of compartments, a piston in each compartment having a stem movable through the aperture in the respective end of the cylinder, valve casings each having ports communicating with the respective compartment of the cylinder, a



discharge pipe communicating with said casings, a cut off valve in each casing, a meter register, a crank arm fixed to each cut off valve, a guide bar fixed to each piston stem and connections between said guide bars and crank arms, a rotatable register operating mechanism, pivotal rods connecting the latter and said guide bars, as set forth.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio	Cincinnati	June 30, noon	Treating with tar Hillside ave. and Warsaw pike; oiling Springfield pike in Springfield township.	Stanley Struble, Pres. Bd. Co. Comrs.
Arkansas	Little Rock	June 30	Paving about 13,000 sq. yds. with creosoted block; 25,000 sq. yds. of macadam.	E. A. Kingsley, Engineer.
Arkansas	Argenta	June 30	Constr. about 30,000 sq. yds. creosated block pavement; 25,000 sq. yds. macadam.	Mayor Faucette.
Ohio	E. Liverpool	June 30	Improving various streets. Estimated cost \$30,000.	C. V. Beatly, Dir. Pub. Service.
Kentucky	Middlesboro	July 1	Constr. sidewalks, curb, and guttering in various streets.	E. S. Helburn, Mayor.
Georgia	Rome	July 1, noon	Grading, curbing and paving various streets with wood block vit. brick, Hassam, asphalt macadam, sheet asphalt and bitu.	J. R. Cantrell, City Clerk.
Indiana	Greencastle	July 1	Constr. about 40,000 ft. of macadam road in Putnam County.	D. V. Moffett, County Auditor.
Vermont	Middlebury	July 1, 3 p.m.	Constructing 2,000 sq. yds. macadam roadway.	Jos. M. Burke, Clerk.
Virginia	Richmond	July 1, noon	Constructing about 7½ miles gravel road.	P. St. J. Wilson, St. Hwy. Comr.
Ohio	Delaware	July 1	Improving Taylor Corporation Road 3.696 miles; and Link State Road 4.68 miles.	W. F. Whittier, County Surveyor.
Tennessee	Rutledge	July 1, 10 a.m.	Grading 16½ miles county highway.	A. M. Nance, Secy. Road Com.
New York	Johnstown	July 3, 7:30 p.m.	Constr. about 2,946 sq. yds. asphalt block pav't; 1,244 lin. ft. curb reset, 30 lin. ft. new curb and appurtenances.	Grover E. Yerdon, City Clerk.
Pennsylvania	Northumberland	July 3, 8 p.m.	Constr. about 3,102 sq. yds. vit. brick pav't; 1,275 lin. ft. stone curb, 1,200 cu. yds. excavation.	Chas. H. Dodge, Clerk Council.
Indiana	Portland	July 3, 10 a.m.	Improving highway in Bearcreek township.	W. Lea Smith, County Auditor.
Indiana	Vernon	July 3, 11 a.m.	Constructing 3 mile pike road in Bigger township.	M. W. Brogan, County Auditor.
Indiana	Williamsport	July 3, 3 p.m.	Constructing highway in Mound township.	D. H. Moffitt, County Auditor.
Indiana	Newport	July 3, 10 a.m.	Constructing gravel road in line Helt and Clinton townships.	H. T. Payne, County Auditor.
Indiana	Franklin	July 3, 1 p.m.	Constructing a gravel in Union township.	W. B. Jennings, County Auditor.
Indiana	Versailles	July 3, 1 p.m.	Constr. macadam roads in Laughrey and Otter Creek townships.	Nicholas Volz, County Auditor.
Indiana	Salem	July 3, 1:30 p.m.	Constructing a road in Brown township.	F. S. Munkelt, County Auditor.
Indiana	LaPorte	July 3, 10 a.m.	Constr. macadamized roads in Scipio and Cass townships.	F. A. Hausheer, County Auditor.
Indiana	Greenfield	July 3, 10 a.m.	Constr. of grades in Sugar Creek and other townships.	C. H. Troy, County Auditor.
Iowa	Corning	July 3, 7:30 p.m.	Grading, paving, curbing and guttering various streets, consisting of about 12,000 sq. yds. vit. brick paving; 2,373 lin. ft. combined concrete curb and gutter; 1,857 gutter; 2,650 yds. grading.	Wm. C. Chubb, City Clerk.
New Jersey	Westfield	July 3, 8:15 p.m.	Constr. about 3,200 sq. yds. bituminous macadam pavement, concrete culverts, drains and appurtenances; 1,000 cu. yds. ex.	Chas. Clark, Town Clerk.
West Virginia	Parkersburg	July 3	Paving with brick portions of 4 roads in Wood County.	C. S. Skidmore, County Engineer.
New York	Olean	July 5, 8 p.m.	Constr. about 9,800 sq. yds. of wire-cut-lug block pavement; 6,000 lin. ft. stone curbing.	John H. Gaynor, Engineer.
Florida	Tampa	July 5, 2 p.m.	Resurfacing about 1½ mile road in Hillsboro County with shell or its equivalent.	Bd. County Comrs.
Indiana	Vincennes	July 5, 2 p.m.	Constr. about 93,400 ft. of gravel roads in Knox County.	John T. Scott, County Auditor.
New Jersey	Jersey City	July 5	Paving the Plank road.	Bd. Freeh., Hudson County.
Pennsylvania	Jermyn	July 5, 7:30 p.m.	Constr. about 11,000 lin. ft. concrete curb, one half to be protected with steel bar.	John A. Loughney, Secy. Town C'cil.
Ohio	Cleveland Hghts.	July 5, noon	Grading, draining, sewerage, paving with macadam and constructing sidewalks in portion of Euclid blvd.	H. M. Canfield, Village Clerk.
Indiana	Fountain City	July 5, 1:30 p.m.	Constructing highway in Fulton township.	W. B. Gray, County Auditor.
Pennsylvania	Pittsburg	July 5, 10 a.m.	Constr. about 10 miles in Allegheny County.	R. J. Cunningham, County Compt.
Ohio	Youngstown	July 5	Paving various streets.	City Clerk.
New Jersey	Newark	July 5, 3 p.m.	Widening and improving the Newark Plank Road.	Joint Com. Co. Essex and Hudson.
North Carolina	Charlotte	July 5, 8:30 p.m.	Paving 58,400 sq. yds. with bitulithic, sheet asphalt, bituminous macadam, vit. brick and wood block.	A. H. Wearn, City Clerk.
California	San Jose	July 5	Improving Cochrane Road and Gilroy Hot Springs Road.	J. G. McMillan, County Surveyor.
Indiana	Valparaiso	July 5, 10 a.m.	Constructing 4 gravel roads.	C. A. Blackly, County Auditor.
Indiana	Bloomington	July 5, 2 p.m.	Constructing a highway in Salt Creek township.	Horace Blakely, County Auditor.
Indiana	Rushville	July 5, 2 p.m.	Constructing a macadam road in Jackson township.	J. M. Stone, County Auditor.
Indiana	Wabash	July 5, 1:30 p.m.	Constr. 3 roads in Paw Paw twp., 2 in Noble, 2 in Chester; 2 in Town of North Manchester.	J. P. Nofftger, County Auditor.
Indiana	Logansport	July 5, 10 a.m.	Constr. a stone road in Boone twp.; gravel roads in Eel and Jefferson townships.	J. E. Wallace, County Auditor.
Indiana	Brownstown	July 5, 1:30 p.m.	Constr. the Medora and River Bridge road and the Sparkville Hill Road.	H. W. Washer, County Auditor.
Indiana	Sullivan	July 5, noon	Constr. gravel, bituminous macadam and stone roads.	Ben. C. Crowder, County Auditor.
Indiana	Muncie	July 5, 10 a.m.	Constr. roads in Union, Center and Mt. Pleasant twps.	Francis M. Williams, County Aud.
Indiana	Kokomo	July 5, 2 p.m.	Constructing 9 mile road in Clay township.	A. B. Easterling, County Auditor.
Pennsylvania	Shamokin	July 6	Paving 3 streets.	W. H. R. Smink, Chief Burgess.
Indiana	Logansport	July 6, 10 a.m.	Constructing a stone road bet. Deer Creek and Washington twps.	J. E. Wallace, County Auditor.
Indiana	Monticello	July 6, noon	Constructing a stone road in Honey Creek twp.	A. G. Fisher, County Auditor.
Indiana	Kentland	July 6, 1 p.m.	Constr. a macadam road in Iroquois twp. and system of stone roads in Grant, Iroquois and Jackson twps.	E. R. Bringham, County Auditor.
Pennsylvania	Wilson	July 6, 8 p.m.	Grading, paving and curbing portion of Fourth street.	J. O. Spence, Chm. St. Com.
Indiana	Evansville	July 6, 10 a.m.	Constructing, grading, and rocking a highway in Center twp.	Chas. P. Beard, County Auditor.
Illinois	Denison	July 6, 2 p.m.	Constructing 2 macadam roads.	Geo. Gray, Chm. Comrs. Hwys.
West Virginia	Huntington	July 6, 1 p.m.	Paving various streets with vit. brick, asphalt, bitulithic, tarvia or asphalt block.	A. B. Maupin, City Engr.
Oregon	Grants Pass	July 6	Constructing 30,000 sq. yds. of pavement.	F. E. Hobson, City Engineer.
Mississippi	Meridian	July 6, 2 p.m.	Constr. 12.35 mi. Novaculite roadway; 2 mi. sand-clay road.	W. P. Moore, Chief Engineer.
New York	Olean	July 6, 8 p.m.	Constr. about 5,000 sq. yds. wire-cut-lug block pavement on concrete foundation; 3,500 lin. ft. stone curb.	John H. Gaynor, Engineer.
Ohio	Cincinnati	July 7, noon	Oiling Harrison pike in Harrison and Whitewater townships; also repairing Indian Hill avenue in Columbia township.	Stanley Struble, Pres. Bd. Co. Comrs.
Ohio	Mt. Gilead	July 7, 11 a.m.	Improving 7½ miles of country road.	Clifton Sipe, County Auditor.
North Carolina	Tarboro	July 7, 4 p.m.	Constr. about 25,000 sq. yds. of 8-in. bituminous macadam paving; alternate bids on 8,000 sq. yds. vit. brick and 11,000 sq. yds. bituminous macadam; constr. sidewalks, drain, etc.	W. O. Howard, Mayor.
Indiana	Williamsport	July 10, 2 p.m.	Constructing a gravel road in Adams township.	D. H. Moffitt, County Auditor.
North Carolina	High Point	July 10, 1:30 p.m.	Grading, curbing and macadamizing various streets, estimated cost \$40,000.	Fred N. Tate, Mayor.
Indiana	Rockville	July 10	Constr. the Shonkwiler Road in Jackson and Union townships, Parke County and in Clinton and Madison townships, Putnam County.	County Commissioners.
Alabama	Andalusia	July 10, noon	Grading and surfacing with sand clay 9 miles of road.	D. K. Caldwell, County Engineer.
Ohio	Wadsworth	July 10, noon	Grading, curbing and paving with vit. brick about 9,500 sq. yds.	Louis F. Allen, Village Clerk.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS (Continued)				
Iowa.....	Greenfield.....	July 11, 2:30 p.m....	Constr. about 14,000 sq. yds. brick or cement paving; 4,500 lin. ft. curb; Iowa Engr. Company, Chase Block, Clinton, Iowa, Engineers.	Town Clerk.
Pennsylvania...	Washington.....	July 12, 11 a.m....	Constr. various county roads with necessary culverts and small bridges, about 23 miles in all.	John H. Moffitt, County Compt. John H. Moffitt, County Compt. Bd. Co. Comrs.
Pennsylvania...	Washington.....	July 12, noon.....	Furn. vit. brick to be used in constructing 162,000 sq. yds. pav.	F. F. Pillett, City Engineer.
Ohio.....	Columbus.....	July 12.....	Resurfacing about 24,000 ft. of county road in Marion twp....	Norman Buckner, Twp. Clerk.
North Carolina...	Wilmington.....	July 15, noon.....	Constr. 24,000 sq. yds. paving, curbing and guttering.	Bd. County Comrs.
Michigan.....	Luther.....	July 15, 4 p.m....	Constr. 11½ miles gravel road in Newkirk and Ellsworth twps.	
Ohio.....	Greenville.....	July 15.....	Constructing the Althoff road in Patterson township.	
Texas.....	Bonham.....	July 15.....	Constr. about 4,538 ft. concrete curb; 22,645 sq. yds. paving; 4,000 sq. yds. grading; 670 ft. storm sewers.	T. W. Ragsdale, Mayor.
Tennessee.....	Johnson City....	July 20, 6 p.m....	Constr. 23,000 sq. yds. paving, including bridges, sewers, storm water drain, concrete curb and gutter, consisting of about 5,000 cu. yds. excavation; 23,000 sq. yds. paving; 12,000 lin. ft. curb and gutter.	W. M. Dunlap, City Comr. H. S. Michaud, County Auditor.
Indiana.....	Decatur.....	July 21, 10 a.m....	Constr. macadamized roads in Allen, Root and Adams twps....	Bd. Pub. Wks.
Wisconsin.....	Racine.....	July 22.....	Paving Owen Avenue.	
SEWERAGE				
Ohio.....	Bucyrus.....	June 30.....	Constr. 7,700 lin. ft. of 10 to 20-in. vit. tile sanitary sewer; 6,700 lin. ft. of 4 and 5-ft. concrete and brick sewer.	F. L. Niederheiser, City Engr. E. L. Williams, City Clerk.
Wisconsin.....	Appleton.....	June 30.....	Constructing sewer in portion of Lawrence Street.	
Utah.....	Salt Lake City...	June 30.....	Extending gravity outlet sewer from present outlet to Great Salt Lake.	H. G. McMillan, Chm. Bd. Pub. Wks.
Kansas.....	Parsons.....	July 1.....	Constr. sewers of double strength vit. pipe with septic tank of concrete and pumping station. Est. cost \$65,000 to \$70,000.	City Clerk.
Pennsylvania...	Ligonier.....	July 1.....	Building sewage disposal plant, including sedimentation tank, sprinkling filter, sludge bed and pumping station; F. H. Shaw, Lancaster, Engineer.	I. F. Brandt, Boro. Clerk. Myron J. Tarble, City Engineer. E. W. Smale, City Clerk.
Illinois.....	Aurora.....	July 1, 2 p.m....	Constr. about 8 mi. vit. tile pipe and 1 mi. concrete pipe sewer.	
Iowa.....	Sheldon.....	July 1, 2 p.m....	Constructing sanitary sewers.	
Maine.....	Bangor.....	July 1.....	Constr. 300 lin. ft. reinforced concrete sewer 5-ft. 5-in. diameter inside, 600 lin. ft. sub drain 6-in. pipe.	W. R. Pattangill, Mayor.
New Jersey....	Elizabeth.....	July 3, 8:30 p.m....	Constr. 665 ft. 24-in. pipe sewer; 510 ft. 20-in.; 510 ft. 18-in.; 560 ft. 15-in. house connections, and appurtenances.	N. K. Thompson, Street Comr. City Clerk.
California.....	San Jose.....	July 3.....	Construct septic tank for County hospital.	J. C. Ely, Dir. Pub. Serv. Fred Shane, Secy. Dept. Pub. Serv. George H. Waskey, Mayor. Fred N. Tate, Mayor. E. L. Thompson, Village Clerk.
Ohio.....	Dayton.....	July 5, noon.....	Constructing sanitary sewers in various streets.	
Ohio.....	Toledo.....	July 5, noon.....	Constr. sanitary sewers in various streets.	
South Dakota...	Madison.....	July 6, 8 p.m....	Bldg. sewer system about 31,465 lin. ft. 6 to 18 in. vit. pipe.	
North Carolina...	High Point.....	July 10, 1:30 p.m....	Constr. sewer and 1 water lines amounting to about \$50,000.	
Ohio.....	West Lafayette...	July 10.....	Constructing storm water sewers. Est. cost \$16,000.	
Georgia.....	Macon.....	July 10, noon.....	Digging trenches and laying 5,003 ft. 12-in. pipe; 3,140 ft. 8-in.; 5,363 ft. 6-in. hydrants, valves, special castings etc.	John T. Moore, Mayor.
Massachusetts...	Fitchburg.....	July 11, 3 p.m....	Constr. 2,928 lin. ft. earth excavation and re-filling in trench for 45-in. sewer; brick masonry, concrete masonry; 40,000 lbs. steel bars for reinforcing concrete.	David A. Hartwell, Engineer. Wm. J. Blake, Jr., City Engr.
New York.....	Newburgh.....	July 11, 5 p.m....	Constr. about 1,450 lin. ft. 15-in. pipe sewer and appurtenances.	Iowa Engr. Co., Clinton, Ia., Engrs.
Iowa.....	Valley Junction..	July 13, 7 p.m....	Constr. 5½ miles 8 to 20-in. sewers and a sewage disposal plant.	
Wisconsin.....	Rhineland.....	July 17, 2 p.m....	Constr. about 10,183 sq. yds. macadam pavement, combined cement curb and gutter.	Geo. C. Jewell, Chm. Bd. Pub. Wks.
WATER SUPPLY				
Minnesota.....	Minneapolis.....	June 30.....	Furnishing filter equipment and devices.	Henry N. Knott, City Clerk. Village Clerk.
Nebraska.....	Bridgeport.....	June 30.....	Constr. water works system. Est. cost \$17,500.	
California.....	Los Angeles.....	June 30, 2 p.m....	Furn. three 14-in. gate valves: six 10-in.; nine 18-in.; two 24-in. and five 26-in.	Horace B. Ferris, Secy. Bd. P. Wks.
Ontario, Can...	Ft. William.....	July 1.....	Selling equipment of municipal pumping and electrical generating plant, suitable for town of 5,000 inhabitants.	John Wilson, City Engineer.
Illinois.....	Homewood.....	July 1, 8 p.m....	Furn. and laying quantity of 6, 8 and 10-in. c. i. pipe, necessary valves and hydrants.	R. B. Harwood, Secy. Bd. L. Imp. City Clerk.
Illinois.....	Mendota.....	July 3, 7:30 p.m....	Constr. an iron and concrete roof on reservoir.	Wm. T. Patton, Town Clerk.
Indiana.....	Rockville.....	July 3, 2 p.m....	Digging a well 8-ft. in diameter and 32 ft. deep, walled with con.	C. A. Myhe, City Engineer.
North Dakota...	Valley City.....	July 3, 8 p.m....	Constructing 732 ft. of 4-in. water main.	
Ontario, Can...	Toronto.....	July 3, noon.....	Laying about 3,500 ft. steel riveted pipe 6 ft. in diameter in Lake Ontario.	F. S. Spence, Acting Mayor.
Ohio.....	Cleveland.....	July 5, noon.....	Furn. a crane framework and track at Kirkland Pumping Station; furn. pipe and special castings for Water Dept.	A. B. Lea, Dir. Pub. Service. H. H. Canfield, City Clerk. W. D. Welsh, Mayor. C. K. Marmon, Town Clerk. City Clerk.
Ohio.....	Cleveland Hghts.	July 5, noon.....	Building 10-in. water main in Cedar Roads.	
Louisiana.....	Kentwood.....	July 6.....	Drilling artesian well.	Bd. Pub. Improvements.
Iowa.....	Gilmore.....	July 6.....	Constr. water works system complete, est. cost \$15,000.	
Nebraska.....	Columbus.....	July 7, 8 p.m....	Constructing and installing a water works extension.	
Missouri.....	St. Louis.....	June 7, noon.....	Furn. 2 steam turbine-driven centrifugal pumping units complete with condensing apparatus and appurtenances.	
New Jersey....	Camden.....	July 10, 11 a.m....	Constr. pump house. Furn. gasoline engine, foundation, gasoline tank pump, connections and standpipe in position; generator with foundation and electrical equipment.	J. J. Albertson, County Engineer.
Ontario, Can...	St. Catherine....	July 13, noon.....	Laying 5,000 ft. 24 and 30-in. c. i. pipe; 15,000 ft. 24-in. pipe; constructing auxiliary reservoir.	Alex. Milne, Supt. W. W. L. N. Senecal, Secy. Bd. Comrs.
Quebec, Can...	Montreal.....	July 13, noon.....	Constr. final filters and appur. forming por. of filtration plant.	
Georgia.....	Macon.....	July 16, noon.....	Digging trenches and laying 5,003 ft. 12-in., 3,140 ft. 8-in., 5,363 ft. 6-in. pipe with hydrants, valves and spec. castings.	John T. Moore, Mayor.
BRIDGES				
Texas.....	Houston.....	July 1.....	Constr. a reinforced concrete viaduct over Houston ship channel about 1,650 ft. long and 60 ft. wide.	F. L. Dormant, City Engr. City Clerk.
Pennsylvania...	Pittsburg.....	July 1.....	Constructing one concrete arch, estimated cost \$85,000.	Jos. Overfield, Clk. Bd. Co. Comrs.
Pennsylvania...	E. Stroudsburg..	July 3, 11 a.m....	Constructing 4 stone bridges.	
Kansas.....	Leavenworth....	July 3, noon.....	Building Peterson Bridge, Tonganoxie Twp.; bridge on Limit St., Leavenworth; bridge across Little Stranger, High Prairie township.	J. A. Hall, County Clerk. P. St. J. Wilson, State Hwy. Comr.
Virginia.....	Richmond.....	July 3, noon.....	Constr. a bridge over Staunton River at Hary's Ford.	Henry A. Pfister, Clk. B. C. Sup.
California.....	San Jose.....	July 5, 11 a.m....	Constr. a pony truss bridge over Campbell Creek; also reinforced conc. add. to the abut. of Ford Road Bdge. over Coyote Creek.	
Ontario, Can...	Lindsay.....	July 5.....	Constr. 2 steel spans with concrete floors each 60 ft., 14-ft. roadway to carry a ten ton roller at least; one 120 ft. span same width and strength, piers, stone filling, etc.	J. R. McNeillie, County Clerk. P. J. Sater, County Auditor. J. E. Elder, County Auditor.
Indiana.....	Columbus.....	July 5.....	Constructing several bridges.	
Indiana.....	Rockville.....	July 5, 1:30 p.m....	Constructing and repairing various bridges.	
California.....	Santa Barbara...	July 5.....	Constr. bridge over Santa Inez River, length 693 ft. roadway 18-ft., three-hinge reinforced concrete. Est. cost \$50,000.	Frank Flournoy, County Engineer.
Ohio.....	Cincinnati.....	July 7, noon.....	Constr. concrete bridge at intersection of German and Compton roads in Springfield township.	Stanley Struble, Pres. Bd. Co. Comrs.
Indiana.....	Richmond.....	July 8, 11 a.m....	Constr. a 24-ft. concrete span bridge in Green Twp.; an 18-ft. span on the Cart Road North of Richmond; constr. a concrete floor on the Canal Bridge at Hagerstown; constr. concrete crete wall and earth filled approach of the Middleboro Bridge.	Demas S. Coe, County Auditor.
New Jersey....	Trenton.....	July 11.....	Constr. a steel and conc. bridge over Herrontown Rd., Princetown township.	Frank J. Eppele, County Engineer. Calvin H. Brown, County Auditor.
Indiana.....	Ft. Wayne.....	July 12, 10 a.m....	Constr. a bridge over St. Joe River, at Tennessee ave.	John R. Goldenbogen, Clk. Bd. C. C.
Ohio.....	Cleveland.....	July 12, 11 a.m....	Constr. concrete bridge in Cleveland Heights twp. & retain. wall	

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
LIGHTING AND POWER				
Arkansas.....	England.....	July 1.....	Building and operating an electric light plant under a 30-year franchise.....	H. Galloway, Recorder.
New York.....	Buffalo.....	July 1, 11 a.m.....	Furn. and erecting power plant equipment at tuberculosis hospital at Pertsysburg, N. Y.; power house and laundry; wiring to main building; constr. water supply system laundry machinery, ice machinery.....	Francis G. Ward, Comr. Pub. Wks.
Alberta, Can....	Stettler.....	July 3.....	Furn. one 125 KVA generator exciter and switchboard; one tandem compound steam engine, boiler, stack, poles, and pole line material; erecting pole line.....	David Mitchell, Town Clerk.
North Dakota....	Valley City.....	July 3.....	Furn. electric lamps, wires, carcans and other supplies in connection with light plant.....	M. J. Body, City Auditor.
Australia.....	Brisbane.....	Jan. 30, noon.....	Designs, supply and erection at Mount Crosby Pumping Station of alternatively one, two and three complete units consisting of power generating pumps and plants, etc.....	Geo. Johnston, Albert St., S.&W.Bd
FIRE EQUIPMENT				
Arizona.....	Douglas.....	July 3, 8 p.m.....	Furn. 500 ft. 2½-in. fire hose in lengths of 50 ft. together with couplings.....	D. F. Johnson, City Clerk.
New Jersey.....	Princeton.....	July 5.....	Furn. auto pumping engine.....	E. M. Updike, Chm. F. & W. Com.
South Dakota....	Gettysburg.....	July 11, 8 p.m.....	Furn. 750 ft. of 2½-in. fire hose; one service hose cart.....	R. L. Flickinger, City Auditor.
MISCELLANEOUS				
Ontario, Can .	Ft. William.....	June 30, 5 p.m.....	Constructing a reinforced concrete subway.....	John Wilson, City Engineer.
Washington.....	Spokane.....	June 30.....	Constructing additions to country jail. Estimated cost \$40,000.....	Bd. County Comrs.
Illinois.....	Mendota.....	July 3.....	Constr. an iron and concrete roof on reservoir.....	City Clerk.
Iowa.....	Fort Dodge.....	July 3.....	Furn. street sweeper. Separate bids on dump and ordinary type.....	W. L. Tang, City Clerk.
Florida.....	Kissimmee.....	July 3, noon.....	Constr. county jail and sheriff's residence.....	E. L. Lesley, Chm. Bd. Co-Comrs.
New York.....	Long Island City.....	July 3.....	Disposing of garbage in 5th Ward, Boro. Queens.....	Lawrence Gresser, Boro. Pres.
Illinois.....	Gillespie.....	July 5, 5 p.m.....	Constructing new city building.....	G. W. Schmidt, City Clerk.
Indiana.....	Muncie.....	July 5.....	Constructing a new barn at County Infirmary, 40x50 ft.....	County Auditor.
Louisiana.....	Mansfield.....	July 5, 10 a.m.....	Erecting a two story and basement, semi-fireproof Courthouse.....	Parish of De Sota
New Jersey.....	Garwood.....	July 5, 8 p.m.....	Constructing a borough hall.....	Wm. Darroch, Boro. Clerk.
Kansas.....	Hutchinson.....	July 7, noon.....	Erecting a municipal building.....	Edward Metz, City Clerk.
Pennsylvania....	Erie.....	July 10, 8 p.m.....	Constructing garbage disposal plant.....	Thomas Hanlon, City Clerk.
Minnesota.....	Caledonia.....	July 11.....	Constructing a brick and cement city hall.....	C. S. Trask, Village Clerk.
New Jersey.....	Camden.....	July 12.....	Furn. 124 ballot boxes 18-in. x 18-in. x 20-in.....	John T. Rodan, Chm. Elec. Com.
Rhode Island....	Providence.....	July 15, noon.....	Constructing 2 comfort stations.....	John H. Higgins, Chm. Com.
Florida.....	Orlando.....	July 17, noon.....	Improving the St. Johns River ferry at Geneva ave. crossing by deepening, widening and straightening cut-off channel.....	B. M. Robinson, Clk. Circuit Court.

STREET IMPROVEMENTS

Montgomery, Ala.—City Commissioners have instructed City Engineer Gilchrist to prepare estimates of cost of preparing Houston, Bell and South McDonough Sts. for oiling and estimates for final cost of oiling these streets.

Tucson, Ariz.—Board of Trustees of Pima County will soon ask bids for construction of speedway; work will consist of grading and oiling; road will be 23 miles long and 30 ft. wide.

Los Angeles, Cal.—Plans for boulevard to extend along northeastern side of Elysian Park have been submitted by the City Engineer to the Board of Public Works; two separate plans for the road are suggested, one of which is estimated to cost \$33,399 and the other \$44,619.

Monrovia, Cal.—Board of Trustees has passed several ordinances providing for extensive street improvements; Falling Leaf Ave. will be graded, oiled and curbed its entire length, a distance of fully a mile, and Orange Ave. will be improved in part.

South Pasadena, Cal.—Plans are being prepared for improvement of five streets with oil macadam at cost of \$300,000.

Colorado Springs, Col.—City Engineer T. L. Wagener has completed estimates of the cost of paving business section as follows: For asphaltic concrete, \$238,370; bitulithic paving, \$265,218; sarcalithic paving, \$229,420; sheet asphalt, \$239,477.

East Hartford, Conn.—Fire District Commissioners have decided to macadamize two streets.

Palatka, Fla.—Citizens will vote July 11 on \$15,000 bonds for paving.—H. A. Davis, Mayor.

St. Petersburg, Fla.—Citizens have voted \$35,000 brick paving bonds and \$5,000 for construction of steel crossing bonds.

Tampa, Fla.—Council is considering paving of West Tenth Ave., West Tampa.

Oglethorpe, Ga.—Macon County will vote on \$150,000 bonds for road construction.

Waycross, Ga.—Ordinance calling for expenditure of \$50,000 for paving sidewalks has been passed by Council. Alderman James Sinclair, Chairman of Finance Committee, will advertise for bids.

East Moline, Ill.—Board of Local Improvements has decided to pave State St. with brick at cost of \$53,000.

East St. Louis, Ill.—Board of Local Improvements has decided to pave Forty-second St. from Lincoln Ave. to Caseyville Rd. with brick.

Indianapolis, Ind.—Board of Public Works has adopted resolutions for ten street improvements to cost about \$60,000.

Mishawaka, Ind.—Board of Public Works has ordered paving of Bridge St.; material undecided.

Bangor, Me.—City is considering a proposition for widening Central St. and con-

structing retaining wall at the edge of the street along whole length of the thoroughfare from the foot of Hammond St. hill to Harlow St.; cost, \$300,000.—P. H. Coombs, City Engineer.

Grand Rapids, Mich.—Bids will be received July 3, 3 p. m., for \$108,000 street improvement bonds.—Jas. Schriner, City Clerk.

Monroe, Mich.—Council has decided to pave Washington St. at cost of \$18,000.

Butte, Mont.—Street and Alley Committee has recommended purchase of steam roller.

Belton, Mo.—Citizens have voted \$10,000 bonds to macadamize business streets.

St. Joseph, Mo.—Board of Public Works has decided to pave Quessame St. with sandstone blocks.—Alfred Meier, President.

Carson City, Nev.—Commissioners of Ormsby County have completed arrangements for building of new road in this county to connect with boulevard to be built in Washoe County from Reno to line of Ormsby County; work will be done by convicts and county will pay so much per man for convicts working on road.

Albany, N. Y.—Board of Contract and Supply will at once ask bids for improving Providence St. and paving Quail St.

Larchmont, N. Y.—Citizens have voted \$25,000 appropriation for sidewalks.

Lestershire, N. Y.—Citizens have voted \$21,000 bonds to improve Main St.

Wrightstown, N. Y.—New Hanover township has decided to issue bonds to build gravel road from Wrightstown through Pointville to township line on the road to Brown's Mills.

Burgaw, N. C.—Pender County will vote July 25 on road improvements.

Mars Hill, N. C.—Mars Hill Township voted \$10,000 toward construction of proposed central highway.

Cincinnati, O.—Plans and specifications will be prepared for widening and improving road from Hoover to Chudlaw Aves., Whitewater Township, at estimated cost of \$4,137.

Lisbon, O.—Construction of about 60 miles of brick paving on the main country roads is being considered.

Norwood, O.—Council has passed ordinance authorizing \$2,000 bond issue for extension of Ivanhoe Ave.

Frederick, Okla.—Council has decided to pave business district.

Muskogee, Okla.—Council is considering resolution calling for \$58,000 of paving with rock asphalt.

Beaver, Pa.—Citizens have voted \$20,000 bonds for street improvements.

New Brighton, Pa.—Citizens will vote July 22 on \$100,000 bonds to improve streets.

Sharpsville, Pa.—Council has decided to pave Mercer ave., Shenango st. and Park Way.

Sumter, S. C.—Sumter County will vote Aug. 1 on \$150,000 bonds for road improve-

ments; \$30,000 is to be expended annually for five years.

Lexington, Tenn.—People of the western side of Henderson County have determined to build good road from Madison County line to a point 2 miles west of Lexington, regardless of any other road or highway that may be in contemplation.—Joe H. Holmes, Chairman.

Denton, Tex.—Lewisville Road District will vote July 29 on \$75,000 road bonds.

San Angelo, Tex.—Special Committee will recommend paving of business blocks with rock asphalt; \$100,000 available.—J. D. Hassell, Mayor.

Seymour, Tex.—Baylor County Commissioners are considering \$100,000 bond issue for road construction.

Dayton, Wash.—Council has decided to pave Main St. and portions of adjacent streets.

Spokane, Wash.—Bids have been rejected for paving Eighth Ave., Cannon to Chestnut Sts., with brick; plans will be changed to some other material.

Wenatchee, Wash.—Council is considering improvement of Methow St. at cost of about \$36,500.

Marquette, Wis.—City will build 30 miles of cement walk this summer.

CONTRACTS AWARDED

Troy, Ala.—To the C. B. Holt Contracting Co., Birmingham, for paving remainder of sidewalks of the city, 10c. per sq. ft.

Jacksonville, Fla.—Paving to Georgia Engineering Company, Riverside Ave., King to McDuff Sts., \$1.58 per sq. yd.; total amount of contract, approximately \$14,500; to Engineering & Paving Company, Third St., \$1.56 per sq. yd.; Hubbard St., \$1.56 per sq. yd.; Newnan St., \$1.55 per sq. yd.; total amount of contract, approximately \$26,000; to George R. Foster, Jr., Riverside Ave., with asphalt, \$2.09½ per sq. yd.; total amount of contract, approximately \$70,000.

Chicago, Ill.—Paving various streets by the Board of Local Improvements: Alley Webster Ave., to P. J. O'Brien, 145 La Salle St.; alley 24th St., to Central Paving Co., 172 Washington St.; alley 31st St., to Central Paving Co.; alleys, Hyde Park Boule., to Jno. A. McGarry Co., 188 Madison St.; N. Ashland Ave., to the American Asphalt Paving Co., 138 Washington St.; W. Chicago Ave., to the American Asphalt Paving Co.; Cottage Grove Ave., to Calumet Coal & Teaming Co., 2926 E. 95th St.; Ellis Ave., to the American Asphalt Paving Co.; Frankfort St., to the American Asphalt Paving Co.; N. 41st Ave., to Standard Paving Co., 1101 S. 48th Ave.; N. 43d Ave., to Standard Paving Co.; E. 56th St., to the Ryan Co., 131 LaSalle St.; Hillock Ave. to the American Asphalt Paving Co.; Lock

St., to the American Asphalt Paving Co.; Mendell St., to R. F. Conway Co., 138 Washington St.; Perry St., to the American Asphalt Paving Co.; Rocher Ave. to R. F. Conway Co.; E. 62d St., to the American Asphalt Paving Co.; S. Washtenaw Ave., to Coal & Teaming Co.; W. 30th St., to the American Asphalt Paving Co.; S. Washtenaw Ave., to Standard Paving Co.; Winchester Ave., to Calumet Coal & Teaming Co.; N. 42d Ct., to R. F. Conway Co.; No. 42d Ct., to the American Paving Co.; Dauphin Ave. system, to Farr Bros. Co., 356 West 111th St.; Clara Place System, to American Asphalt Paving Co.

Brookville, Ind.—Construction of two gravel roads to Sullivan & Mason, \$10,225.

Laporte, Ind.—Constructing macadam road in Spring Township by Bd. County Commissioners John G. Young, \$18,000.

Logansport, Ind.—Wolford Rd. to E. E. Barnard, Delphi, Ind.; Richards Rd. to George Emery, Galveston, Ind.; Ireland Rd. to Fred T. Woods, Burnettsville, Ind.; Umbarger Rd. to Harry A. Barnes & Son, Logansport.

Mt. Vernon, Ind.—Construction of gravel roads in Posey County: To White & Egenmann, Evansville, Ind., \$4,900 and \$5,941; to Mt. Vernon Construction Co., Mt. Vernon, \$7,950; to S. R. Adams & Co., Princeton, \$29,157; to Campbell & Harodins, Brazil, Ind., \$23,780; to S. A. Gano, Mt. Vernon, \$8,154.

Ft. Dodge, Ia.—Laying 7,500 sq. yds. concrete paving on 3d and 4th Aves. to James Tile & Mfg. Co., \$1.58½ per sq. yd.

Osage City, Kan.—Paving four blocks of business section to McGuire & Stanton Paving Co., Leavenworth, \$1.94 per sq. yd. for "Fort Scott No. 1" brick.

Boston, Mass.—Building walks and drains in Boston common to Coleman Bros., \$8,788.35; other bidders: Andrew M. Cusack, \$10,105.40; Frank H. Cowin Company, \$12,178.10; building macadam roadway in Railroad St., West Roxbury, to West Roxbury Trap Rock Company, \$4,162; John Kelly & Co. bid \$5,481.80; engineers' estimate, \$7,200, which includes cost of the edgestones furnished by city; building brick block pavement on Hancock St., to F. S. & A. D. Gore Corporation, Bessemer block, \$17,909.60; other bidders: James Doherty, Mack block, \$18,459.70; Central Construction Company, Mack block, \$18,730.40; William J. Barry, Mack block, \$18,908.20; John F. O'Connell, Mack block, \$19,245.50; Frank H. Cowin Company, Porter block, \$19,058.60; Bessemer block, \$19,817.60; engineers' estimate, \$27,000.

Boston, Mass.—Building State roads: In Athol and Phillipston, 22,000 ft. of oiled macadam, to C. E. Horne, Milbury, at \$7.819; in Montague, 17,000 ft. of oiled macadam, to C. E. Horne, Milbury, at \$7.020; in North Adams and Williamstown, 28,000 ft. of oiled macadam road, to F. J. Magne, at \$12.343; only other bid was Frank Williams & Co., Boston, \$16,570; in Whately, 10,200 ft. of oiled macadam road, to Lane Construction Corp., Meriden, Conn., at \$4.631.

Detroit, Mich.—Paving Canton Ave., from Kercheval to Mack, with sheet asphalt, to Thos. E. Currie, McGraw Bldg., at \$29,233; Jones St., from Cass Ave. to Fifth St., with brick to F. Porath & Sons, Penobscot Bldg., at \$8,623.

Jackson, Miss.—Paving 20,000 square yards with asphalt to Southern Asphalt Paving Co., about \$50,000.

Elizabeth, N. J.—By Committee on County Roads of the Board of Freeholders for repairing of county roads to Weldon & Co.

Trenton, N. J.—To Peter K. Austin by Bridge Committee of the Board of Freeholders for building of two culverts on Pennington-Harbourton Rd., \$1,125; other bidders, John Ginder, \$1,250, and Thomas McGovern, \$1,180.

Woodbridge, N. J.—Laying macadam on Ridgedale ave., Mutton Hollow road and Halton st. and Cliff road, Sewaren, to J. C. Fowler, of Sewaren.

Albany, N. Y.—Building State roads, Albany-Guilderland Road No. 5155, to B. D. Pierce, Jr., Company, Bridgeport, Conn., \$75,701, for Gilsonite; Olean-Hillsdale-Cuba State Highway No. 5137, Cattaraugus, 8.83 miles, to H. C. Bunks & Company, Olean, \$107,443, for residuum; Cutting-French Creek County Highway No. 939, Chautauqua Company, to Busch & Percival, Buffalo, \$78,989; Jamestown-Frewsburg County Highway No. 940, Chautauqua Company, 4.24 miles, to Thos. Mahoney, Jamestown, \$76,337; other bidders, Lake Shore Construction Company, Dunkirk, \$76,907; John Swanson, Jamestown, \$81,637; Lancaster-Alden County Road No. 917, 4.11 miles, to Constantine Bros. Company, Buffalo, \$90,440; Batavia-Stafford State Road No. 5145 to F. J. Mumm, Buffalo, \$41,800, for residuum; Hope Center-Wells, Part 1, State Highway No. 5133, Hamilton Company, 5.48 miles, to Brown & Lave, Schenectady, \$64,358, for residuum;

Watertown-Clayton Road, Part 1, No. 5140, 5.24 miles, to B. C. Miller, Wilkes-Barre, Pa., \$52,427, for residuum; Marcy Hill-Trenton County Highway No. 931, Oneida County, 12.07 mi., and Deerfield Corners-Marcy Hill Company Highway No. 933, to O. T. Benedict, Pittsfield, \$143,000, for Bermudez and Trinidad; Monroe-Oxford State Highway No. 5144, Orange County, 3.31 miles, to Schunnefunk Construction Company, Highland Mills, \$38,113, for residuum; Schenectady-Westford County Highway No. 935, Otsego County, 3.83 miles, to the Lane Construction Company, Meriden, Conn., \$35,940; Schenectady-Westford County Highway No. 936, 4.15 miles, to Lane Construction Company, Meriden, Conn., \$47,450; Wells Bridge-Otsego State Highway No. 5153, Otsego County, 4.61 miles, to Newport Construction Company, Newport, N. Y., \$51,556, for residuum; Hornell-Big Creek State Highway No. 5130, Steuben County, 1.16 miles, to Greenfield Construction Company, Brooklyn, N. Y., \$11,290, for residuum; Freeville-Groton County Highway No. 926, Tompkins County, 4.49 miles, to Amos D. Bridge's Sons, Hazzardville, Conn., \$39,729; Smith's Basin-Lime Kiln County Highway No. 942, Washington County, 0.66 miles, to C. J. Reardon, Glens Falls, \$4,600; Scotia Village Road No. 5132, Schenectady County, 1.27 miles, to Dollard & Heeran, Albany, \$45,883; Dunhams Basin County Highway No. 720-A, Washington County, 0.24 miles, to C. J. Reardon, Glens Falls, \$2,317; Byram Lake-Bedford State Highway No. 5146, Westchester County, 3.34 miles, to Jas. Garafano, Mt. Vernon, \$43,985, for residuum; Warsaw-Pavilion Road No. 5134, Wyoming County, 3.59 miles, Part 2, to Fred J. Mumm, Buffalo, \$49,400, for residuum; No. Reading-Dundee, Part 2, State Highway No. 5128, Yates County, 2.68 miles, to Thos. J. Ford, Elmira, \$36,999, for residuum; Peekskill-Fishkill Road, Part 1, Westchester and Putnam Counties, No. 5147, 3.63 miles, to Samuel Beskin, Fishkill, \$51,850, for residuum.

Albany, N. Y.—Repaving Maiden Lane, North Pearl to James St., to P. W. Mulderry, \$969.70.

Gloversville, N. Y.—Paving E. 8th Ave., Forest and W. Fulton Sts., about 13,000 sq. yd., with Clearfield brick on concrete, to Albert M. Banker, Gloversville; paving \$2.38 per sq. yd. and setting curb on concrete 30 cts. per lin. ft.; total cost about \$34,734.

Little Falls, N. Y.—Paving and curbing of Albany and Second sts., to Warren Brothers, Boston, \$27,081.74.

Lockport, N. Y.—Building cement walk on Pine St. to John Irwin, \$2,170.

Norwich, N. Y.—By Village Board of Trustees to the Tibbitts-Maher Co. for paving with repressed brick Birdsall St., \$25,700, and Hayes St., \$10,700.

Rochester, N. Y.—By Board of Contract and Supply for the construction of asphalt pavement in Winton Road to Whitmore, Rauber & Vincinus, \$34,964; Zimbrick st. brick pavement to F. V. Brotsch, \$4,201.

Syracuse, N. Y.—Paving Onondaga Ave. from end of present pavement to Cortland Ave. to the Warner-Quinlan Asphalt Company, \$25,564.15, by the Board of Contract and Supply.

Utica, N. Y.—Repaving Park Ave., Elizabeth to Lansing St., to Harry W. Roberts & Co., \$3,967.

Akron, O.—By Board of Control Saturday: Howe St. paving, \$14,294, to E. McShaffrey & Son; Bishop St. sewer to S. W. Parshall \$4,585; Jewett St. paving, \$653.80, to Matt McCourt and retaining wall, \$1,535.90, in Pleasant Park to J. V. Kidder.

Canton, O.—Paving Canton-North Industry Rd. for a distance of 2¼ miles to Frank A. Downs, Canton, \$29,397; other bidders: P. Dieffenbacher & Sons, \$29,730; Preston Campbell, \$30,276; William H. Stanton, \$33,794; Wise, Smith & Krabill, \$33,804; R. C. Roush, \$34,228; Pierce & Talerice, \$34,549; Peter Hahn & Son, \$34,421; engineer's estimate, \$30,893.

Cincinnati, O.—By County Commissioners for improvement of Loveland and Madeira road, from Remington to Camargo pike, to Van Camp Brothers, \$16,032.

Columbus, O.—Street paving: 14th Ave., from Summit St. on the Big Four tracks, Portsmouth Blk. with cement filler, 4400 yd., to George W. Patterson & Son, \$12,076; Kossuth St., from Bruck St. to Parsons Ave., Nelsonville Blk., with cement filler, 3600 yd., to Geigle & Barnes & Co., \$8997; 19th Ave., from Summit to Fourth St., Trimble Blk., with cement filler, 1900 yd., to George W. Patterson & Son, \$5473.

Coshocton, O.—To Cleveland Trinidad Paving Co., Cleveland, to pave Park, Orchard and Sixth Sts., \$12,870.

East Liverpool, O.—Paving Thompson, Blakely, Vine and Fawcett Sts. to Hinton & Cunningham, East Liverpool, \$13,000; Railroad and First Sts., to Thomas McLaughlin, East Liverpool, \$12,400.

Perrysburg, O.—By Council for paving 2d St. with brick to T. J. Mulligan, Lima, \$38,335.

Portland, Ore.—Paving the Skidmore district with bitulithic pavement to the Warren Construction Company by City Executive Board, \$306,382.

Altoona, Pa.—Paving Washington Ave. to Bell-Bockel Co., \$2.17 per sq. yd.; supplies for highway and sewer division; cement in carload lots to Standard Equipment Co.; ballast to L. W. Flanagan; broken stone to Canon-Knox Supply Co.; brick to Altoona Brick & Tile Co.; hauling to L. H. Pressle, 40c. per hour.

Beaver, Pa.—By Council to George B. Clifford, New Brighton, \$24,583, for paving Market St., from Fifth to borough line north.

Clarion, Pa.—Building 13,178 ft. of new State road in Clarion County, from the Richland Township line in Beaver Township through Monroe Township to Blairs Corners, to J. E. Francis, Punxsutawney, \$40,000; road is to be 10 ft. wide and will be of brick.

Johnsonburg, Pa.—Paving Center St. to Applegate & Pascuzzi, approximately \$15,000.

Philadelphia, Pa.—To Barber Asphalt Company for original paving with asphalt of various streets in city and also for repaving a number of asphalt streets.

Scottdale, Pa.—Paving portions of S. Chestnut and Stoner Sts., Grant and 4th Aves., requiring 6,734 sq. yds. vitr. brick or block, also vitr. hillside brick or block, 1,825 sq. yds., etc., awarded to Chas. H. Baldwin, Coraopolis.—J. B. Hogg, Connellsville, Borough Engineer.

Salt Lake City, Utah.—Sidewalk extension No. 148 to McKee & Burt, \$3,871.35.

Norfolk, Va.—To F. J. McGuire to build road through Villa Heights, \$1.25 sq. yd. for roadway and 47c. per ft. for curb.

South Bend, Wash.—Paving Broadway, Water, Adams and Quincy Sts. to (a) C. L. Morris Constr. Co., Seattle, \$155,045; (b) Ollar-Robinson Co., 614 Bankers' Trust Bldg., Tacoma bid, \$169,298; 8,700 cu. yd. earth excav. (a) 50c., (b) 50c.; 3,534 cu. yd. rip-rap (a) \$1.25, (b) \$1.50; 19,200 lin. ft. 3-in. tile drain (a) 15c., (b) 10c.; 18,000 lin. ft. concrete curb (a) 45c., (b) 45c.; 179,177 sq. ft. concrete sidewalks (a) 14½c., (b) 14c.; 10 catch basins (a) \$25, (b) \$35; 40 curb inlets (a) \$15, (b) \$14; 2,000 lin. ft. 6-in. vitr. sewer pipe (a) 60c., (b) 50c.; 55,690 sq. yd. asphalt pavt. 5-in. base (a) \$1.85, (b) \$2.09.

Spokane, Wash.—Paving Wall St. with Hassam concrete, Sumner to 14th Ave., estimate \$15,400, to Inland Empire Hassam Paving Co., the only bidder, \$15,509; sidewalk Herow Ave., Crestline to Pittsburg St., estimate \$1,970; to Naylor and Norlin, \$1,734.

SEWERAGE

Clarksville, Ark.—City will construct sewer system; cost \$25,000; John M. Davis, D. Ward Dunlap and A. N. Ragon, Board of Commissioners.

Coalinga, Cal.—Citizens have voted \$40,000 bonds for construction of sewer system.

Oakland, Cal.—Council has accepted bids of the Oakland Bank of Savings for purchase of bonds totaling \$476,000, recently voted by residents of annexed territory for sewerage of four sanitary districts.

San Jose, Cal.—Citizens have voted \$110,000 bonds to build sewers.

Pacific Grove, Cal.—T. B. Hunter, Monterey, is preparing plans for proposed system of storm waterways; contract will soon be let; cost about \$62,000.

Colorado Springs, Col.—Council has decided to install five blocks of sewers.

Plant City, Fla.—City is considering construction of sewer system.

St. Petersburg, Fla.—Citizens have voted \$5,000 bonds for sewer extension.

Columbus, Ga.—Council is considering construction of new and complete sanitary sewer system.

Unadilla, Ga.—Citizens have voted \$15,500 bond issue for sewer construction.

Dayton, Ill.—Board of Local Improvement has selected F. L. Stone, of Ewing & Stone Co., Chicago, to design and supervise construction of complete sewer system.

Geneva, Ill.—Harry L. Wells, of Geneva, has been selected as engineer for sewer system to be constructed on west side of the city.—F. M. Marsteller, Mayor.

West Terre Haute, Ind.—Town Council is considering construction of water works.

Lawrence, Kan.—Council has passed ordinance authorizing asking of bids for construction of all sewers where contracts had not been let.

Mulvane, Kan.—City proposes to construct sewer system; cost \$6,000.—S. F. Field, Mayor.

Wichita, Kan.—City will construct sanitary sewer mains No. 20 consisting of 12, 15, 18, 30, 39, 42, 45, 48-in. concrete, brick or vitrified pipe sewer; trenching machine

with 15-ft. cut will be needed.—Bert Wells, City Engineer.

Waterville, Me.—City will construct re-inforced concrete trunk sewer.—Harry E. Green, City Engineer.

New Bedford, Mass.—Plans by Metcalf & Eddy, Consulting Engineers, have been approved for proposed intercepting sewers to cost \$1,526,000; work includes sewer outfall, \$113,000; Acushnet & Clark's cove intercepting sewers, \$958,000; screen house, grit chamber and power station, \$86,000; pumping station and equipment, \$29,000; also second outfall, \$110,000, and two additional pumping stations and equipment, \$230,000.

New Bedford, Mass.—Committee on Roads and Sewers has recommended construction of sewers in Jouvette and Query Sts.

Grand Rapids, Mich.—Bids will be received July 3, 3 p.m., for \$45,000 sewer construction bonds.—Jas. Shriver, City Clerk.

Reed City, Mich.—Geo. Cadogan Morgan, Chicago, Ill., has completed survey and is now working on plans for proposed sewer system.

Eveleth, Minn.—Cost of installing sewers along Hayes, Cleveland and Garfield Sts. has been estimated at \$1,003.

Willmar, Minn.—No bids were received June 12 for constructing two purification plants and pumping stations; new bids will soon be received.—J. A. Rowat, City Engineer.

Bellevue, Neb.—Citizens will soon vote on bonds for erection of municipal sewer system and water works.

Hasbrouck Heights, N. J.—A. C. Austin, Mayor, desires correspondence with engineers in regard to installing proposed system of sewers.

Long Island City, L. I., N. Y.—Board of Estimate of New York City has decided to construct sewers in Stoothoff, Ridgewood, Hamilton Aves., Queens Boro. as extensions to Richmond Hill system now under construction, from Jamaica Ave. to Jamaica Bay, and the disposal plant; total cost, \$76,200; also authorized preliminary work on the following: Sewer in Flushing Ave., Maspeth; estimated cost, \$14,500; sewer in Fresh Pond Rd., Ridgewood; cost, \$29,900; sewer in Hancock St., Long Island City, 290 ft. north of Paynter Ave., and sewer in Troutman St., Ridgewood, and in Metropolitan Ave.; estimated cost, \$18,700.

Hillsboro, Ore.—Bids will soon be asked by Council for installing sanitary sewers in business districts.

McKeesport, Pa.—Ordinance for sewers in East End has passed.

Somerset, Pa.—Additional \$12,000 will be expended for water works improvements from plans of L. E. Chapin, Pittsburg.—Chas. J. Shaver, Borough Secretary.

Pawtucket, R. I.—Council has passed joint resolution appropriating \$15,000 for construction of sewer connecting systems of this city and Providence.

CONTRACTS AWARDED

Ft. Dodge, Ia.—To Jas. Benson to construct sanitary sewer on Fourth Ave.

Portland, Me.—To Wm. H. Doughty for construction of Robinson and Ocean st. sewers; 40c. per ft. and \$33 per manhole.

Boston, Mass.—To McCarthy & Walsh for sewerage works in St. Botolph St. extension from Gainsborough St. 310 ft. southwesterly, city proper, \$4,450.72; other bidders: Peter W. Hill, \$4,719.38; Antony Cefalo, \$4,840.40; R. J. Young & Co., \$5,102.47; A. M. Cusack, \$5,344.55; C. J. Jacobs Company, \$5,665.68; George J. Regan, \$5,684.38; engineers' estimate, \$4,668.50; to George J. Regan for sewerage works in Spencer St., Melville Ave., River, Flint and Bay Sts., Dorchester, \$1,832.10; other bidders: Murphy & Dolan, \$2,047.23; Daniel E. Lynch, \$2,064.70; William J. Rafferty Company, \$2,071.75; M. F. Gaddis, \$2,200.07; John McCourt & Co., \$2,687.60; engineers' estimate, \$1,915; to Murphy & Dolan for sewerage works in Brinsley St., between Columbia Road and Washington St., Dorchester, \$2,314.65; other bidders: Antony Cefalo, \$2,406.10; A. M. Cusack, \$2,701.55; M. De Sisto & Co., \$2,733.60; George J. Regan, \$2,789.40; John McCourt & Co., \$2,888.95; Charles J. Jacobs Co., \$2,913.65; William J. Rafferty Co., \$2,945.30; F. H. Cowin Co., \$3,649.45; R. J. Young & Co., \$3,980; engineers' estimate, \$2,662.97.

Bessemer, Mich.—Laying 7,150 ft. vitr. pipe sewers, 2 ft. to 16 ft. deep; 1,835 ft. of 2 x 2½ ft. reinforced concrete sewer, 3 to 9 feet deep; 19 brick manholes, 5 concrete manholes, etc., from plans of W. G. Kirchoffer, of Madison, Wis., to Peter Becker, Bessemer, \$13,193.

Mt. Vernon, N. Y.—Building North Second Ave. sewer to Jas. Piro, \$1,098.

Eddystone, Pa.—By Council to Cantrell Construction Co. for sewer work, \$8,950.

Patton, Pa.—By Council to the Baker-Owen Construction Co., Johnstown, con-

tract for laying 9,117 ft. of 6 and 8-in. terra cotta sewer pipe under ten different streets of borough.

South Bend, Wash.—Construction of a system of drainage and sanitary sewers to the John Constr. Co., 507 Leary Bldg., Seattle, as follows: 118,680 ft. lumber, \$15; 268 30-ft. piles driven and cut off, \$5; 1,610 lin. ft. trunk sewer barrel, \$10; 90 6-in. Y's, \$1; 12 side sewer connections, each, 60c.; 5 manholes, each, \$20; 3 inlets, \$20; 1,325 lin. ft. 6-in. vitr. pipe sewer, 70c.; 1,960 lin. ft. 8-in. vitr. pipe sewer, 80c.; 1,360 lin. ft. 10-in. vitr. pipe sewer, \$1.20; 320 lin. ft. 15-in. vitr. pipe sewer, \$1.50; 63 6-in. Y's, \$2; 74 8-in. Y's, \$2.25; 75 10-in. Y's, \$3; 3 15-in. Y's, \$4.50; 15 manholes, each, \$40; total, \$26,066; totals of other bids: C. L. Morris Constr. Co., Seattle, \$26,178; Frank S. Misho, Seattle, \$26,603.

Cudahy, Wis.—To Rudyard E. Kerlin, Cudahy, for constructing sewer mains.—G. H. Wippler is City Clerk.

Montreal, Que., Can.—To L. Giguere & Co., sewer construction through Longue Point, Rosemount and St. Denis, \$263,247; sewer on Azilda Ave., \$43,880; sewer on Mercier Boule., \$33,200.

WATER SUPPLY

Clarksville, Ark.—City will construct water works; cost \$30,000; John M. Davis, D. Ward Dunlap and A. N. Ragon, Board of Commissioners.

Dunsmuir, Cal.—Improvements to cost \$75,000 will be made by the Dunsmuir Water, Power & Light Co.; 18 and 12-in. pipe will be laid from Mossbrae Falls to Dunsmuir.

Washington, D. C.—Report from American consul states that a decree has just been issued by President of Latin-American Republic authorizing local government to purchase three well-drilling machines and to employ competent men to operate them; the machines and operatives are to be rented to farmers at fixed rate for purpose of increasing number of artesian wells in the rural districts. Address No. 6840, Bureau of Manufactures.

Jesup, Ga.—Citizens have voted \$25,000 bonds for construction of water works.

Pocatello, Ida.—J. A. Jones has asked for franchise to install water system.

Arthur, Ill.—City has decided to construct water system at cost of \$151,000; about 4 m. of water main will be laid.—Claud James, Mattoon, Engineer; J. F. Martin, Mayor.

Herrin, Ill.—Citizens have voted \$33,500 bonds to start construction of water works.

Mishawaka, Ind.—Board of Public Works and the Committee on Water Works of Council are considering plans and specifications prepared by Superintendent of Water Works E. F. Crabill for new system of mains to be laid to carry pure water to various parts of city.

Bedford, Ia.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., are preparing plans for installation of water works.

Des Moines, Ia.—Citizens have voted to give Council authority either to purchase or build waterworks plant.

Mt. Hope, Kan.—Election on bonds of water works is being considered.

Kentwood, La.—Citizens will vote on bond issue of \$50,000 for water and sewerage system.

Libertytown, Md.—Town is to have a water works of its own if the plans of the Volunteer Fire Company materialize; orders have been given to Civil Engineer E. C. Crum to begin surveys latter part of next week, and the work will be pushed as fast as possible; a stream, called Town Branch, which runs through town, will be utilized for supply.

Rising Sun, Md.—Establishment of water works system is being considered.

Franklin, Mass.—Town has sold \$40,000 water bonds to E. H. Rollins & Sons.

Benton Harbor, Mich.—Citizens have voted \$50,000 bonds for water works.

Grand Rapids, Mich.—Bids will be received July 3, 3 p.m., for \$200,000 sand filtration bonds.—Jas. Shriver, City Clerk.

Eveleth, Minn.—Cost of installing water main on Elba Ave. has been estimated at \$1,397.15 and on Harrison St., \$319.60.

Grasston, Minn.—John Youngquist will prepare estimate on cost of installing water mains.

Culbertson, Mont.—Citizens have voted \$39,500 bonds for water works system.

Cabool, Mo.—Citizens will soon vote on \$9,000 bonds to install water system.

Milan, Mo.—Preliminary plans have been prepared by Hiram Phillips, Consulting Engineer, Third National Bank Bldg., St. Louis, for installation of a water works system; estimated cost is \$25,000; work includes construction of a reservoir.—John W. Boughen, Milan, is in charge.

Bellevue, Neb.—Citizens will soon vote on bonds for erection of municipal water works and sewer system.

Louisville, Neb.—Citizens have voted \$6,000 bonds for installation of water works.

Omaha, Neb.—Citizens will vote June 28 on \$8,250,000 water bonds.

Charlestown, N. H.—Town is arranging to construct small gravity water system for village of North Charlestown; pipe, hydrants, etc., have been purchased and will be laid by the superintendent of the Charlestown Water Works.—Dudley & Sawyer, Manchester, Engineers.

Trenton, N. J.—George Johnson, of the firm of Johnson & Fuller, Consulting Engineers, who have in charge preparation of a hypochlorite sterilization plant for water department, has submitted plans to the Water Board.

Albany, N. Y.—State Water Supply Commission has denied application of the Monroe County Board of Supervisors for regulation of Genesee River, under River Improvement Act, by construction of reservoir at Portage at cost of about \$5,000,000.

Selma, N. C.—City desires water works, with tanks of 50,000 to 100,000 gallons capacity; water supply from deep wells or Neuse River.—John A. Mitchener, Mayor.

Oak Harbor, O.—Citizens have voted \$35,000 bonds for water works improvements.

Bennington, Okla.—City will construct water works at cost of \$20,000.

McAlester, Okla.—City has advertised for bids for one duplex pump and 40,250 lin. ft. eight-in. black steel pipe, to be used in extension of city water works system.

Hermiston, Ore.—Walter B. Hinkle has been selected to prepare plans and superintend construction of proposed water system.

Monmouth, Ore.—Citizens have voted \$25,000 bonds for water works.

Glen Rock, Pa.—Jacob H. Brillhart, 34 N. Seventh Ave., Bethlehem, is preparing plans and specifications for additional water supply.

Ipswich, S. D.—Bids will be received about July 15 for the construction of water works from plans of the Dakota Eng. Co., Mitchell; cost about \$20,000.—E. J. Engler, City Auditor.

Galveston, Tex.—City Engineer A. T. Dickey, after inspection of city water works pumping station, has recommended increasing of compressed air pipe in each of the 30 wells a distance of 15 ft.

New Braunfels, Tex.—Citizens will vote July 11 on \$67,000 bonds to construct dam across the Guadalupe River and lay mains from dam to the Comal Springs, where pumping station will be installed to furnish city's water.

Rocky Mount, Va.—Citizens have voted \$75,000 bonds for establishment of water works, sewerage and municipal electric light plant.

Tacoma, Wash.—Installation of hydrants in various sections of the north end is being urged.

Wapato, Wash.—Engineer D. R. Redman has submitted to Council plans and specifications for a municipal water plant for city.

Melfort, Sask., Can.—T. Aird Murray, Consulting Engineer, Toronto, has presented report to the town regarding proposed installation of water works and electric light plant.

St. Boniface, Man., Can.—City will expend \$75,000 on the water works system this year; \$40,000 of which will be used for erection of reservoir.

CONTRACTS AWARDED

Gadsden, Ala.—Furnishing pipe and specials for extending water mains to American Pipe & Foundry Company; valves, lead and yarn to Crane Company, and hydrants to Ludlow Manufacturing Company.

San Francisco, Cal.—Completing the laying of pipe for an auxiliary water system to the Raich Improvement Co., 109 Montgomery St., \$91,500.

Vallejo, Cal.—Construction of reservoir on Fleming Hill about 20 miles north of this city to the American Construction Co., San Francisco, \$35,925.

Greeley, Col.—To Foster & Doll, Denver, for doing concrete and iron work for filtration basin No. 3 at the city water works, \$7,565.

Evansville, Ind.—Contract for dirt fill to be made around filter plant at the city water works to Parsons & Rooney, contractors, 24½c. per cu. yd., to be made with wheel scrapers.

Frederick, Md.—Improvements to water works; furnishing and laying to 1013 tons c. i. pipe, to United States Cast Iron Pipe & Foundry Co., 71 Broadway, New York City, \$21,531; pipe, to R. D. Wood & Co., New York City, \$1,075; valves, hydrants, etc., to Charles Roy, Johnstown, Pa., \$79,641; for excavation and laying of pipe, to William H. Boardman, 426 Walnut St., Philadelphia, Pa.—Frank E. Tyerar, Superintendent.

Boston, Mass.—Relaying water pipe in five streets, Charlestown, to S. Camoi, \$1,119.05; engineer's estimate, \$1,355; same in Intervale St., Dorchester; Howitt Road, Maple and Maxfield Sts., West Roxbury; Park Vale Ave., Miles and Tip Top Sts., Brighton; Cottage, Lubec and Orleans Sts., East Boston, to Hugh McNulty, \$1,140.90; other bidders: John A. Costello & Co., \$1,321; Michael De Sisto, \$1,355.30; Thomas Burke, \$1,428.10; Daniel E. Lynch, \$1,790; engineer's estimate, \$1,432; same in Church, Fayette and Melrose Sts., city proper, to J. A. Costello & Co., \$1,715.05; engineer's estimate, \$1,937.50.

Two Harbors, Minn.—Furnishing 30-kw. high efficiency transformer for water and light plant to Jos. Beck.

New York, N. Y.—To the T. A. Gillespie Co., 50 Church St., for completion of Hudson siphon and part of the Hudson River division of the Catskill aqueduct in the towns of Cornwall and Fishkill, \$1,649,020.

Concord, N. C.—To Clarendon Construction Co., Wilmington, N. C., to install complete filter plant, \$26,000; to Glamorgan Pipe & Foundry Co., Lynchburg, Va., for c. l. pipe, \$13,500.

Bradley, S. D.—Building water works to Joel McKee, city, \$12,722; other bidders: E. L. Dumeh, Laurel, Neb., \$14,589; Roberts & Few, Brookings, \$14,405; Fraser & Danforth, Rochester, \$13,216; Des Moines Bridge & Iron Works, Des Moines, Ia., \$14,096; Cook Construction Co., Des Moines, \$14,159; L. W. Schruth, Fargo, N. D., \$13,864; and W. D. Lovell, Minneapolis, Minn., \$13,631.

Denison, Tex.—By City Commission to D. W. Rainey, Muskogee, to drill artesian well at new waterworks pumping station.

Ft. Ward, Wash.—To McInnis & Harington for constructing reinforced concrete reservoir Worden \$31,200; pipe line, \$5,100.

Redmond, Wash.—To Jeffery & Bufton, Portland, Ore., for proposed water works system at Clino Falls, \$24,500.

Snohomish, Wash.—To Atlas Construction Co., Everett, to lay 16 in. of wooden water mains.

BIDS RECEIVED

Geneva, N. Y.—Constructing reservoir in connection with water system improvement as follows: Lupfer & Remick, of Buffalo (2 bids), \$26,850 and \$22,900; Coughlin, Lowman & Bradley, Elmira, \$24,632; Simpson Bros. Cor., Boston, Mass., \$28,960; G. W. Thompson, Utica, \$30,250; Hennebique Construction Co., New York City, \$34,900; Gahren, Dodge & Maltby, New York City, \$38,865.

Fort Worth, Tex.—Building filtration plant: Texas Building Co., of Fort Worth, the New York Continental Jewel Filtration Co. and the Pittsburg Filter Mfg. Co., the last-named submitting two bids of \$62,207 and \$69,983, in accordance with different plans; highest bid, \$76,156.

Lexington, Va.—Furnishing material and work on gravity water supply: A. Wyckoff & Son, Elmira, N. Y., 41,600 ft. of wood pipe, \$18,503; U. S. Cast Iron Pipe and Foundry Co., Philadelphia, Pa., 16,800 ft. of 8-in. c.-l. pipe, at \$22.90 per ton, or \$3,931; Glamorgan Pipe and Foundry Co., Lynchburg, Va., 16,800 ft. of 8-in. c.-l. pipe, at \$23.50 per ton, or \$3,165; Lynchburg Foundry Co., Lynchburg, 16,800 ft. of c.-l. pipe, at \$23.65 per ton, or \$3,223; R. D. Wood, Philadelphia, Pa., 16,800 ft. of 8-in. c.-l. pipe, at \$24 per ton, or \$3,360; Central Foundry Co., 16,800 ft. of 8-in. Universal joint pipe, \$11,592. Trenching and pipe laying: H. C. Brooks, Clarksburg, W. Va., \$28,943; S. B. Bennington, Lynchburg, \$32,024; J. L. Meem, Lynchburg, \$28,386; Stamper Ragland & Co., Richmond, Va., \$25,090; Gallagher & Bryan, Baltimore, Md., \$22,537; Cantrell Construction Co., Parkersburg, W. Va., \$23,655; J. F. McGuire, Norfolk, Va., \$24,249; C. O. Ladd & Co., Germantown, O., \$19,960.

LIGHTING AND POWER

Berryville, Ark.—North Arkansas Power Company has been incorporated, capital \$100,000, to develop electricity from streams in Northern Arkansas for use for lights and power for factories, etc. J. R. Neff, E. Ingram, Ellis D. Munger and others, Directors.

Clarksville, Ark.—City will construct electric light plant; cost, \$20,000; will purchase wires and poles of E. T. McConnell's plant, destroyed by fire. John M. Davis, D. Ward Dunlap and A. N. Ragon, Board of Commissioners.

Cotter, Ark.—City has granted 30-year franchise to E. B. Griswold to operate electric light plant.

Dermott, Ark.—City is considering improving electric light plant; betterments will include installation of direct-connected generating unit.

Live Oak, Cal.—Metz & Berg have been granted permission to build electric light system.

Wilmington, Del.—Street and Sewer Commissioners have decided to remove all wires, poles and posts from Market st., which is to be beautified by the use of ornamental standards for lights and trolley wires.

Plant City, Fla.—City is considering construction of electric light plant.

Washington, Ga.—Citizens will vote July 14 on \$30,000 bonds for reconstructing electric light plant; will erect building 60x70 ft., mill construction; Westinghouse, Church, Kerr & Co., 10 Bridge st., New York, engineers.—E. A. Barnett, Mayor.

Elkhart, Ind.—Indiana & Muncie Electric Co. is preparing to ask for bids for rebuilding of dam in St. Joseph River and erection of power house.

Elkton, Md.—Council has granted franchise to Home Manufacturing Light & Power Company.

Easthampton, Mass.—Easthampton Gas Co. has applied for permission to issue \$125,000 additional stock; part will be expended for improvements.

Mansfield, Mass.—Town has voted to issue \$22,500 bonds for enlargement of municipal light plant.

Canby, Minn.—Installation of electric lights is being considered.

Coffeerville, Miss.—P. M. Woodall desires correspondence with manufacturers of machinery for electric light plant for town of 700 or 800 people; gas-producer type to burn lignite preferred.

Deeth, Nev.—Board of Commissioners has granted franchise to Deeth Mercantile Co. to build and operate electric lighting system.

Whippany, N. J.—No 50-year franchise to lay gas mains along Hanover Township Road will be given to the Public Service Gas Company, of Morristown.

Chaumont, N. Y.—Charter has been granted to the Chaumont Electric Light Co. with a capital stock of \$8,000. Edgar H. Merriman, of Adams Center, and Chas. N. Arnold and George Diefendorf, Chaumont, Directors.

Rochester, N. Y.—To Standard Underground Cable Company for 6,000 ft. of four-conductor cable for the Fire Alarm Telegraph System, 9 1-10 cts. per ft.

Selma, N. C.—City desires electric light plant.—John A. Mitchener, Mayor.

Valley City, N. D.—O. N. Guidlin, Ft. Wayne, Ind., has petitioned for franchise to install gas plant.

Williston, N. D.—Lignite coal deposits of this region will be utilized in manufacture of gas through action of Col. A. B. Kerlin, of Devils Lake, and E. A. Wilson, of Fargo, who will act jointly in establishment of gas plant at early date.

Beaumont, O.—The Central Ohio Power Co. will soon be formed to construct electric power plant; C. W. Humphrey, Chicago, Ill., Architect.

Shawnee, Okla.—City is without light or power because of the burning of big power house of Shawnee Gas and Electric Company with loss of \$125,000.

Greenwood, S. C.—City desires gas plant; 8,000 population; would consider granting franchise. G. W. Gardner, care of Greenwood Journal, can be addressed.

Chamberlain, S. D.—Contracts will soon be let for the construction of proposed electric light plant for the Electric Light Co.—J. H. Kennedy, Secretary.

Corpus Christi, Tex.—Ordinance granting gas franchise to a syndicate composed of Joseph Hirsch, Royall Givens, M. T. Gaffney, Jacob Smith and others has been passed by Council.

Newport News, Va.—Citizens have defeated proposition to issue \$150,000 bonds for erection of municipal electric light plant.

Richmond, Va.—Committee on Electricity has authorized purchase of 16,000 ft. of wire for the municipal plant and four transformers to be used in Washington Ward; estimates have been asked for ornamental lights on Jefferson St., from Broad to Franklin.

Bluefield, W. Va.—Appalachian Power Co. has bought electric plant at Keystone and Welch.

Bluefield, W. Va.—T. George Carroll, Baltimore, Architect, has been selected to prepare plans for large retort house and apparatus rooms for Bluefield Gas & Power Co.; proposed building will be two stories high, of brick, with stone and concrete trimmings.

Menasha, Wis.—Council has voted to contract with Northern Hydro-Electric Co., Oshkosh, for current to supply municipal commercial lighting system; proposed to issue bonds to cover the cost of transmission lines and service connections.

Wausaukee, Wis.—Alex. Dufresne is planning to install electric light plant.

CONTRACTS AWARDED

Chicago, Ill.—Furnishing 25,000 ft. No. 6 B. & S. J. rubber-covered lead-encased electric light cable to the Simplex Electrical Co., 1144 Monadnock Block, Chicago, \$3,287.—Wm. Carroll, City Electrician.

Pittsfield, Mass.—Building 28 miles of high-tension transmission line from Pittsfield to Canaan, Conn., to F. T. Ley Co., Inc., Springfield, for the Berkshire St. Ry. Co.; 8 miles of this line will be on steel towers; contract also includes an addition to power house at Pittsfield and number of transformer stations along the line.

York, Pa.—Edison Electric Light Company to the Smyser-Royer Company to supply ornamental iron posts for use in Center Square; lights will be placed in position during the summer.

Richmond, Va.—Underground wiring on West Broad St. to W. H. Jenks, city, \$985.

Melville, Sask., Can.—Light and water improvement to Kilmer, Pullen & Burnham, Toronto, Ont., agents for General Electric Co., for generators, switchboards, excitors, pumps, motors and compressors, installed complete, \$7,438; the Northern Electrical & Mfg. Co., Ltd., Winnipeg, Man., for street lighting system, \$832, and for poles and all line material, \$2,947, and William Bross & Sons, Minneapolis, compression tanks, \$2,018; McAvity & Cons, St. Johns, N. B., for hydrants, and Stanley-Brock Co., Toronto, Ont., for mains and castings.

FIRE EQUIPMENT

San Jose, Cal.—Citizens have voted \$60,000 bonds to purchase new equipment for fire department.

Thompsonville, Conn.—Fire Chief W. J. Hines has recommended purchase of auto fire truck and installation of additional fire alarm boxes.

Indianapolis, Ind.—Board of Public Works is considering erection of three engine houses; \$95,000 available.—C. A. Schrader, President.

Ottawa, Kan.—Board of Control has recommended \$3,500 appropriation to purchase auto for Chief Graham.

Lowell, Mass.—Council is considering \$20,000 appropriation for erection of fire house at Merrimack and Race sts.

Springfield, Mo.—Fire Chief Hiram McLaughlin has recommended erection of fire station and purchase of modern apparatus and hose.

Atlantic City, N. J.—Appropriation of \$25,000 has been asked Council by the Ventnor City Fire Co. to increase present fire fighting equipment.

Atlantic City, N. J.—Councils' Fire Committee is now actively at work on plans for the new fire station to be erected at Atlantic and California Ave.

Burlington, N. J.—Neptune Hose Company will erect fire house.

Marion, O.—Council has adopted \$22,500 bond ordinance for erection of fire station and \$15,000 for auto fire apparatus.

Norwood, O.—Council has passed ordinance authorizing \$2,500 bond issue for equipment of fire department.

Roff, Okla.—City is considering erection of \$10,000 fire station and city hall.

Milton, Ore.—Council has appointed committee to ascertain probable cost of hook and ladder and hose cart.

St. Johns, Ore.—Fire Commissioners will at once purchase three hose carts and 1000 ft. of hose.

East Mauch Chunk, Pa.—Fairview Hose Company is considering purchase of steamer.

Washington, Pa.—Special Committee has recommended purchase of combination auto chemical engine and hose wagon.

Salina, Utah.—Council has decided to purchase 1600 ft. of hose.

Wheeling, W. Va.—Fire Committee has recommended erection of chemical house, purchase of chemical hose at cost of \$500 and cotton hose at \$2,000; also minor equipment.

CONTRACTS AWARDED

Sacramento, Cal.—Furnishing aerial truck for Fire Department to C. Gray Company, \$6,000; two runabouts for Chief and Assistant Chief to Thos. B. Jeffrey Company.

Bayonne, N. J.—Furnishing 2000 ft. of fire hose: 700 ft., each at 90c. per ft., to the Fabric Fire Hose Co. and the Voorhees Rubber Co., 600 ft., at 90c. per ft., to Eureka Fire Hose Co.

Little Falls, N. Y.—To G. F. Andrews for building hose wagon, \$245.

Lebanon, Pa.—To the C. C. C. Fire Hose & Rubber Co., for 1050 ft. Gold Standard special brand multiple woven hose, \$1.10 per ft.; to Eureka Fire Hose Manufacturing Co., for 1050 ft. Paragon 3-ply hose, \$1.10 per ft.



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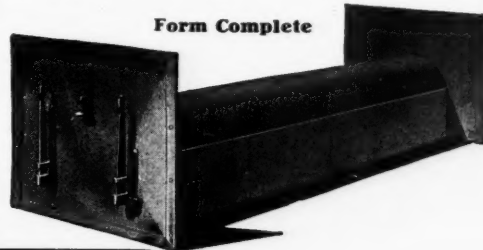
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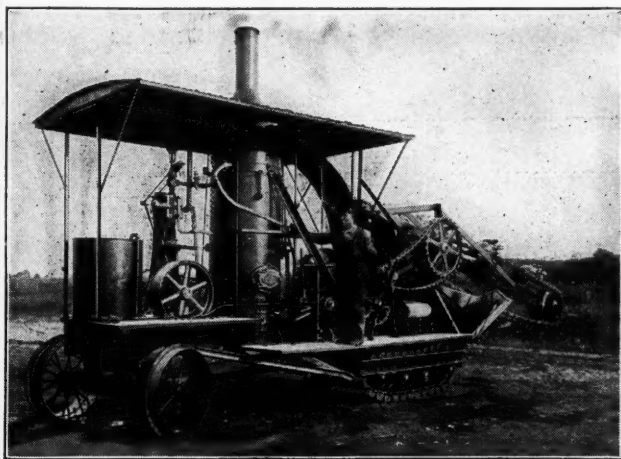
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BRIDGES

San Jose, Cal.—Citizens have voted \$55,000 bonds to repair and build bridges.

New Haven, Conn.—Plans have been prepared by Frederick Law Olmstead, Arch., Boston, Mass., for stone bridge at Edgewood Park; plans call for stone arch bridge, rough-hewn, in old English style; cost about \$7,000.

Clifton, Col.—Work will be started on the Clifton Bridge to connect with Orchard Mesa in near future.

Chicago, Ill.—City's \$5,555,000 bond issues for construction of several new bridges and the payment of long standing judgments against city, which were authorized by the voters April 4, have been declared invalid.

Peoria, Ill.—Orion Township has asked Board of Supervisors to erect three bridges at cost of \$1,550, \$600 and \$700.

New Castle, Ind.—County Commissioners have accepted plans and specifications for five large concrete bridges to be erected in Henry County during the coming summer; total cost about \$8,000.

Natchitoches, La.—Bids will soon be asked for erection of bridge across Cane River at Bermuda.

Beatrice, Neb.—Gage County Board of Supervisors has decided to erect concrete bridge on South Sixth st. road.

Hinkley, N. Y.—Town Boards of Trenton and Russia are considering erection of \$12,000 concrete bridge over West Canada Creek.

New York, N. Y.—Board of Estimate has approved plan for constructing viaduct in Park Ave.

Altoona, Pa.—Plans have been submitted by the engineering department of the Pennsylvania Railroad Co. for proposed new Seventh St. bridge and they will be taken up at once by the Board of Public Works.

Cheltenham, Pa.—Erection of \$6,000 bridge over Tacomay Creek has been recommended.

Uniontown, Pa.—Fayette County Grand Jury has recommended building of joint county bridge over the Monongahela River, between South and West Brownsville.

Superior, Wis.—Board of Public Works will at once ask for bids for building foot bridge at Newton Ave. on Seventh St.

CONTRACTS AWARDED

Wilmington, Del.—Levy Court has awarded the contract to build Roseville bridge to the Nelson Meredith Company.

Jacksonville, Fla.—Construction of concrete bridge spanning Miller's Creek on Atlantic Boule. to the Logan Concrete & Engineering Company, city, as follows: 15 yd. excavating, 50c. per yd., \$10.50; bridge, \$1,290; 840 ft. filling, 18c. per ft., \$151.20; total cost, \$1,451.70; other bidders: A. J. Cassery Company, Jacksonville, \$1,680.60; Carolina Concrete Company, Greensboro, N. C., \$1,503.65.

Clinton, Ia.—To the Joliet Bridge & Iron Co., bidding \$6,499, by Board of Supervisors, for the construction of bridges Numbers 8, 16 and 22.

Towson, Md.—By Baltimore County Highways Commission to York Bridge Co., York, Pa., to construct drawbridge on Eastern ave. over Back River, \$4,995.

Pateron, N. J.—Building steel and concrete bridge over Wesel brook on Central ave., Clifton, to the De Vogel Contracting Company by County Board of Freeholders.

Scranton, Pa.—To W. H. Lyons, of Sunbury for the substructure of Mulberry St. viaduct; contract was awarded by the York Bridge Company, which secured the general contract for work.

MISCELLANEOUS

Birmingham, Ala.—Site has been selected for erection of proposed \$40,000 city jail.

San Jose, Cal.—Citizens have voted \$110,000 bonds to build bath house at Alum Rock Park, beach reservation with bridges, erect buildings, etc.; \$50,000 for garbage incineration and \$2,000 for public comfort stations.

St. Petersburg, Fla.—Citizens have voted \$15,000 bonds for reservoir lake and lake park improvements.

Jesup, Ga.—City is considering \$5,000 bond issue to erect city hall.

Moultrie, Ga.—Colquitt County is considering bond issue to erect jail.

Topeka, Kan.—Construction of fire department headquarters building and remodeling of interior of city hall will begin as soon as City Board of Commissioners can make plans.

Kirkwood, La.—Erection of \$5,000 city hall is being considered.

Grant, Mich.—Special election will be held soon to decide whether village is to purchase a public park or not.

Boonville, Mo.—Cooper County has voted \$115,000 bonds for erection of court house.

Chickasha, Okla.—Citizens are considering \$75,000 bond issue to establish park system.

Roff, Okla.—City is considering erection of \$10,000 city hall and fire station.

Klamath Falls, Ore.—Citizens have voted bonds for erection of \$30,000 city hall; contract will be let at once.

Ashley, Pa.—Reilly & Schweder, Wilkes-Barre, have prepared plans for erection of \$25,000 town hall.

Beaver, Pa.—Citizens have voted \$30,000 bonds for erection of city hall.

Philadelphia, Pa.—Bids will be received July 10, noon, for \$9,750,000 loan for erection of Convention Hall, payment of manumissions, acquiring property along Parkway and improving same, improvements to Delaware and Schuylkill River fronts, repaving streets, completion of the high pressure fire main system in mill district; continuing work of improving League Island Park and Boulevard; construction of main and branch sewers; reconstruction of Cocksink sewer; erection of new bridges, grading streets, surfacing and resurfacing country roads, payment of damages for taking property for Cobb's Creek Park, for acquiring property and erection and improvement of buildings for police and fire purposes, purchase of police and fire apparatus and equipment; erection of buildings for the feeble minded and treatment of contagious diseases, improvement of South Broad St. Plaza, erection of a Soldiers' and Sailors' Monument and preparation of history, improvement and equipment of children's playgrounds, for replacing and reconstructing elevators in City Hall and improvements in Fairmount Park, Hunting Park and Pennypack Creek Park, and for opening streets under the Richmond Branch of the Philadelphia and Reading Railway, between Richmond St. and Kensington Ave.—John E. Reyburn, Mayor.

CONTRACTS AWARDED

Willows, Cal.—Building city hall to Graham & Jensen, contractors, Willows and Merced, \$24,987.

Middlesboro, Ky.—To L. A. Galyon & Co., Knoxville, to build new city hall, \$46,034.16.

Rochester, N. Y.—Erection of the peristyle, which is to connect the Administration Building and the proposed Art Building at Exposition Park, by the Board of Contract and Supply to A. W. Hopeman & Sons Company, \$21,364.

Ebensburg, Pa.—To John L. Elder, Jr., Ebensburg, for erection of annex to Almshouse, \$19,769.

Wheeling, W. Va.—Furnishing street signs to O. O. Gates Company, Schmulbach Bldg.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

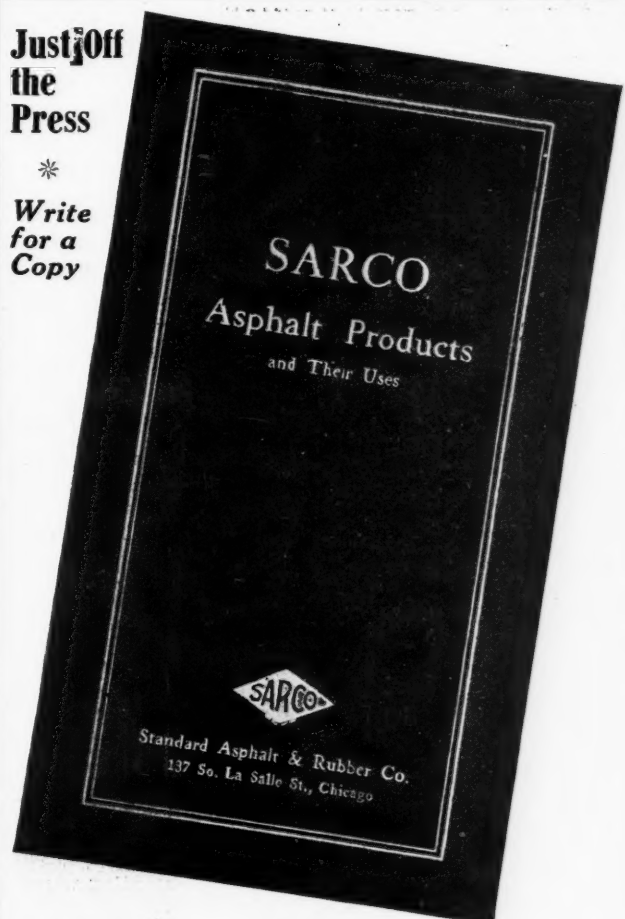
STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Michigan.....	Detroit.....	July 6, 7:30 p.m.....	Paving three streets with sheet asphalt, asphalt block and reinforced concrete.....	R. M. Ford, Clerk.
Louisiana.....	Crowley.....	July 1.....	Constr. about 300,000 sq. ft. concrete sidewalks.....	R. J. Boudreaux, City Clerk.
New Jersey.....	Trenton.....	July 5, 8 p.m.....	Paving one street with sheet asphalt concrete base; and one with macadam.....	Harry B. Salter, City Clerk.
New Jersey.....	South Orange.....	July 6, 8 p.m.....	Constr. cement curb and gutter in Richmond ave.; grading and macadamizing several streets.....	Edward R. Arcularious, Town'p Clk.
Pennsylvania.....	Erie.....	July 10.....	Paving two streets.....	Thomas Hanlon, City Clerk.
Florida.....	Jacksonville.....	July 21.....	Constructing about a mile of county road.....	County Engineer.
Minnesota.....	Minneapolis.....	July 24.....	Constructing Superior Boulevard.....	C. M. E. Carson, County Comr.
SEWERAGE				
Pennsylvania.....	Coraopolis.....	July 3, 7:30 p.m.....	Constructing about 1,100 ft. of 15-in. sewer.....	J. B. Hogg, Boro. Engr.
New Jersey.....	Trenton.....	July 5, 8 p.m.....	Constr. san. sewers and house con. in 2 streets.....	Harry B. Salter, City Clerk.
Alabama.....	Birmingham.....	July 5.....	Constructing a sewage disposal plant.....	L. H. Salter, Sanitary Engr.
New York.....	Buffalo.....	July 7, 11 a.m.....	Constr. 10 and 12 in. tile sewers, in two streets.....	Francis G. Ward, Comr.
Tennessee.....	Nashville.....	Aug 10, 3 p.m.....	Constr. about 7 miles of circular brick trunk sewers, ranging in size from 30 to 111-in. in diameter.....	Wm. W. Southgate, City Engr.
WATER SUPPLY				
New Jersey.....	Camden.....	July 10, 11 a.m.....	Constr. pump house; furn. gasoline engine and foundations, connections and standpipe; generator and electrical equip.....	J. J. Albertson, County Engineer.
LIGHTING AND POWER				
Pennsylvania.....	Wilkes Barre.....	July 6, noon.....	Lighting streets, lanes and public places of Wilkes Barre with gas or naphtha lights for period of 3 or 5 years.....	Martin Barrett, Chm. Light Com.
FIRE EQUIPMENT				
Maine.....	Bangor.....	June 30, 7:30 p.m.....	Furn. 2000 ft. 2½ in. double-jacket, rubber lined, woven hose.....	W. S. Mason, Chief Engineer.
BRIDGES				
South Carolina.....	New berry.....	July 1, 4 p.m.....	Erecting a steel or iron bridge over Enoree river at Brazleman's ferry.....	L. I. Feagle, Chm. Co. Bd. Comrs.
Pennsylvania.....	Coraopolis.....	July 3, 7:30 p.m.....	Constr. concrete culvert over McCabe's Run.....	Ernest C. Harper, Boro. Secy.
New Jersey.....	Camden.....	July 10, 11:30 p.m.....	Constructing two concrete culverts.....	J. J. Albertson, County Engineer.
MISCELLANEOUS				
Louisiana.....	Baton Rouge.....	July 1.....	Furn. 13,000 ft. of 4-in. iron pipe, to be delivered at Angola.....	W. W. Heard, Pres. Bd. Control.
New York.....	Buffalo.....	July 10, 11 a.m.....	Erecting one story fireproof garage for Police Dept.....	Francis G. Ward, Comr.
Connecticut.....	Hartford.....	July 10, 11 a.m.....	Constr. new fire station.....	Jos. Butts, Secy. Bd. C. & Sup.
Alabama.....	Decatur.....	July 11, 8 p.m.....	Constructing a city hall.....	H. A. Skeggs, Mayor.
Iowa.....	Oskaloosa.....	July 24, 5 p.m.....	Constructing a city hall building.....	T. H. Carlin, City Clerk.

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Gentlemen—Please send me a copy of your booklet,
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Street.....
City.....
State.....

STREET IMPROVEMENTS

Colton, Cal.—City is considering \$250,000 expenditure for street improvements, including purchase of road outfit.

New Castle, Del.—William A. Kimmey, City Engineer, is now engaged in making inspections of different road materials preparatory to asking for bids for paving of streets.

Washington, D. C.—District Commissioners have ordered improvement of L St. S. E. at cost of \$3,000.

Newark, N. J.—Board of Works has decided to ask for new bids for paving Woodside Ave.

Syracuse, N. Y.—Surveys have been completed for proposed improved county highway in southeastern part of the town of Skaneateles; surveys have been finished also for Manlius-Oran road, and for about four miles on each Jamesville-Onativia highway and road from the Collamer improved highway towards South Bay.

South Fork, Pa.—Portions of five streets in borough are to be paved this year.—W. O. Thomas, of Johnstown, Borough Engineer.

Lynnville, Tenn.—Board of Aldermen is considering building of new streets; also repair of present streets.

Spokane, Wash.—Paving plan for the Northwest boulevard has been recommended to the City Council by Commissioner Coates. Estimates of various kinds of paving for the job compiled by the City Engineer are: Asphalt, \$156,000; asphalt macadam, \$113,000; bitulithic, \$172,000; bitumass, \$129,000; granitoid concrete, \$178,000; standard concrete, \$178,600; Hasam concrete, \$151,300; petrolithic, \$104,000; and wood block, \$187,000.

Superior, Wis.—Council has ordered repaving with permanent material of North Fourteenth St.

CONTRACTS AWARDED

Pasadena, Cal.—Grading, oiling, curbing and guttering of Catalina st., from Washington to north city limits, to W. A. Donatville, \$6,407.72.

Tampa, Fla.—To Edwards Construction Company for building 1 mile of shell paving in Seminole Heights for Seminole Development Company.

Belvidere, Ill.—Macadam paving, grading and curbing of North Main, Van Buren, Menominee and Perry sts. for the distance about the city park, and for Hurlbut ave., to Fair & Taylor, Belvidere, \$22,495.

Holyoke, Mass.—Paving 6,100 sq. yds. with brick, to Shawmut Paving Brick Co., \$1,865 per sq. yd.; granite blocks, to Daniel O'Connell's Sons, \$54 per 1,000.

Newark, N. J.—To P. & P. Janaronne for paving South St. with granite; to MacMahon Construction Company for paving Clifton St.

Paterson, N. J.—By Freeholders for oiling about fifty miles of country roads, the total cost of which will be about \$11,000, to J. S. Sowerbutt and McKiernan & Bergen, lowest bidders.

Rochester, N. Y.—Iroquois St. brick pavement to Thomas Holahan, \$2,740; Court St. sewer to Henry Schoenfeldt, \$1,300; Blossom Road grading and walks to W. A. Margrander, \$8,721.50.

Cincinnati, O.—Building culvert on Betts Ave., College Hill, by County Commissioners to Wm. P. Flynn, \$1,255.

Norwood, O.—Oiling streets, to Citizens' Road Preserving Co., of Cincinnati, .2865 per sq. yd.

Grand Rapids, Mich.—To L. C. Hilding for paving Fountain St., \$6,977.40; other bidders: McDermott & Cooper, \$7,337.43, open; C. E. Williams, \$7,657.03, open; Carpenter & Anderson, \$7,254.85, standard; the engineer's estimate was \$7,017.20, open, and \$7,907 in the closed specifications; street will be paved either with asphalt or bituminous macadam.

Pittsburg, Pa.—Furnishing county with road roller to Kelly Springfield Road Roller Company.

Chattanooga, Tenn.—Paving Main st. with a 14-ft. vitrified brick center, flanked on each side by 11-ft. strip of California asphalt, to Southern Paving & Construction

Co., \$67,098.73; asphalt used will be the Maltha brand.

Dallas, Tex.—Paving North Akard st., to Creosoted Wood Block Paving Co., \$3.29 per sq. yd. for 4-in. creosoted wood block.

Lockhart, Tex.—To Van Flowers, to lay six miles of macadamized roads between Luling and Prairie Lea.

Chehalis, Wash.—By City Council for planing number of streets in the eastern part of the city, to Albers & Son, about \$6,950.

Tacoma, Wash.—Various Improvements: To Ollar Robinson & Co., for paving East 26th st. in local improvement district No. 453 with brick, \$25,800; Lister Construction Company, for grading and planing Portland ave. and constructing sidewalks along the thoroughfare, \$23,800; Engineer's estimate was \$27,294; to Tignalli & Paine, for grading North 25th st. from Proctor to Stevens in local improvement district No. 767, \$5,540; Engineer's estimate was \$7,011; nine other bids were received, the highest \$10,000.

Construction of sanitary sewer improvement district No. 1100, to Salafino & Chiappetta, \$2,375; to the Kasal Construction Company, for laying water mains in local improvement district No. 578, which includes the Hunts Prairie, Latshaw, Mechanics, Travers Oak Grove and Hays' additions, \$3,306; the local improvement district No. 572 for laying mains through Opie's Tacoma ave., Gray's Tacoma ave., the Belmore, Cottage Home and Dewey's First additions, to Tignalli & Paine, \$4,950; estimate, \$5,484; contract includes laying a 12-in. wooden main along Park ave. from 72d to 76th sts. and 6-in. c.-l. and wood mains along 73d, 74th and 75th sts.

SEWERAGE

Mishawaka, Ind.—Board of Public Works has passed resolution for construction of sewer on North Race St.

Holyoke, Mass.—Board of Public Works has decided to ask prices for 2,400 ft. of sewer pipe; the City Engineer will submit plans for extension of Franklin st. sewer.

Libby, Mont.—Citizens have voted \$20,000 bonds to install sewers and take up outstanding warrants.

Binghamton, N. Y.—City Engineer John A. Giles finished survey for Pennsylvania and Park Ave. sewers.

Chattanooga, Tenn.—Town Commissioners of St. Elmo have contracted with engineering firm of Cushman & Fairleigh to make plans and supervise construction of sewerage system.

WATER SUPPLY

Prairieburg, Ia.—Citizens will soon vote on installation of water works system at cost of \$4,000.

South Stillwater, Minn.—Bids will be received July 5, 8 p. m., for \$5,000 bonds to improve water works.—C. A. Anderson, Recorder.

Blairsville, Pa.—Council is now investigating gravity system of water supply.

Dallas, Tex.—Purchase of three large air compressors, two pumping engines, the necessary 8 to 16-in. water pipe and other fixtures for immediate use in Water Department has been authorized by Board of City Commissioners.

CONTRACTS AWARDED

Cincinnati, O.—Furnishing two electric current generators for filtration plant of the waterworks, by Director Sundmaker to the Fort Wayne Electric Works, \$1,635.

Muskogee, Okla.—To United States Cast Iron Pipe & Foundry Co. for pipe for new water works system, \$83,000; to Wrenslar Co. to supply the valves and hydrants, and to John B. Clow fittings.

FIRE EQUIPMENT

Bay City, Mich.—Fire Committee will soon ask bids for purchase of proposed auto fire apparatus.

Matteawan, N. Y.—Architect C. B. Van Slyck has prepared plans for erection of

truck house on Main st. for W. H. Mase Ladder & Truck Company.

Barberton, O.—Council has decided to purchase fire engine.

Alpine, Tex.—Volunteer fire company is being organized.

Spokane, Wash.—Citizens will vote July 18 on \$100,000 bonds to erect fire station.

CONTRACT AWARDED

Baumont, Tex.—Furnishing automobile combination chemical and hose wagon at a cost of \$5,500, to American La France Fire Engine Co., Elmhurst, N. Y.

BRIDGES

Hoquiam, Wash.—Council has instructed its Clerk to call for bids for construction of a wooden bridge across Hoquiam River at Ramer ave.; cost \$15,000.

CONTRACT AWARDED

Pittsburg, Pa.—Bridge work to the Universal Portland Cement Company for 5,000 barrels of cement; repairing county bridges according to specifications of the County Engineer to S. B. Little, Paumeister & Smith and Eli Crum; repairing joint bridges between Westmoreland and Allegheny Counties to J. C. Marshall, Eli Crum and S. B. Little; to Farris Bridge Company for creosoted wood block for 18 county bridges, \$16,794; furnishing lumber to L. S. Hodil, W. T. McNeal and A. M. Bell.

MISCELLANEOUS

Springfield, Ill.—Plans by Architect Conway have been accepted for erection of bathing houses at two parks; cost, \$500 and \$700 each.

South Bend, Ind.—Board of Public Works has asked for bids for erection of boat house in Leeper Park to shelter police motor boat.

Fort Dodge, Ia.—City Health Officer Dr. C. J. Mulroney has recommended need of garbage incineration plant.

Louisville, Ky.—Plans by Architects D. X. Murphy & Bro. have been approved by Board of Aldermen.

Newark, N. J.—Board of Works has directed Chief Engineer Sherrerd to prepare data on installation of municipal garbage disposal plant.

Cincinnati, O.—Bids will be received July 11, noon, for \$300,000 bonds to erect and equip hospitals and pest houses.—E. Von Barga, City Auditor.

Toledo, O.—Appropriation of \$2,000 has been voted by Finance Committee to Service Department to be used to begin work on comfort station at the Steadman monument, Summit and St. Clair Sts.

Philadelphia, Pa.—City will erect police station at 1254 N. Twenty-sixth St.

Sharon Hill, Pa.—Citizens have passed \$7,000 loan bill to make improvements.

El Paso, Tex.—County has voted to issue \$30,000 bonds to purchase poor farm.

Spokane, Wash.—Citizens will vote July 18 on \$650,000 bonds to erect City Hall.

CONTRACTS AWARDED

Holyoke, Mass.—Erecting shelter at Maple st. playground, to O'Connell's Sons, \$2,395.

Andrews, Tex.—Erecting court house, to F. M. Knight & Son.

Spokane, Wash.—Furnishing 100 refuse cans for street intersections, to Spokane Corrugated Culvert and Tank Company, \$640.

BIDS RECEIVED

Indianapolis, Ind.—Collecting and disposing of garbage: Indianapolis Sanitary Company, present contractor, \$63,000 year for five-year contract and \$62,000 for ten-year contract; Gemmer & Henry, \$68,000 year for five-year contract and \$63,000 year for ten-year contract; bids of the Indianapolis Sanitary Company are same as the bids the company submitted a month ago, while bids of Gemmer & Henry are \$1,000 a year less than their former bids.



Hand-Wiped
Joint

or lead flange, in from one
to eight branch.

Gooseneck Headquarters

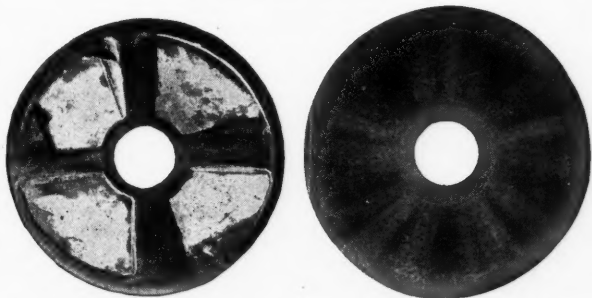
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will increase life of rubber valves
300 per cent.



Two rubber valves pumping raw water under 167 lbs. pressure

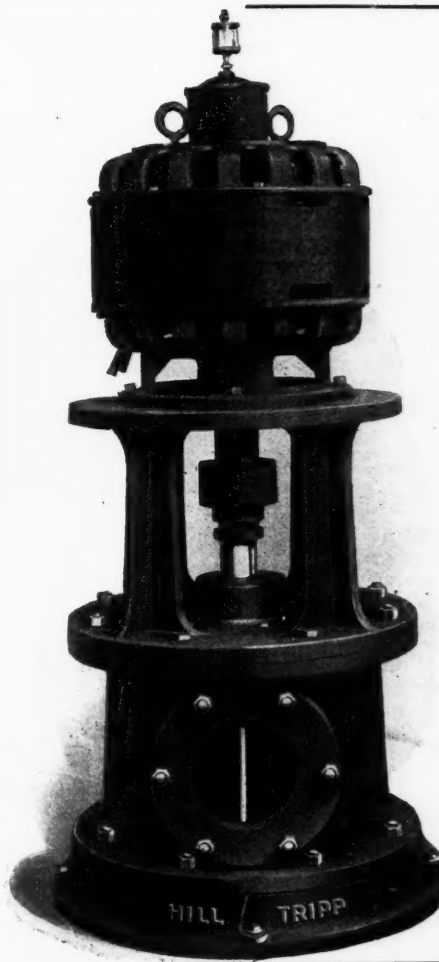
There is shown here a photographic reproduction of a rubber valve used for 41 days on a common straight port seat. It will be noticed how deeply the rubber has been cut to the shape of the openings in the seat while in service.

This print was made from a rubber valve of the same brand and manufacture as that shown on opposite cut. It was taken from same pump fitted with our Rotary Valve Seats, after service of 136 days. It proves clearly that wear was uniform throughout. It was in good condition and fit for much longer service.

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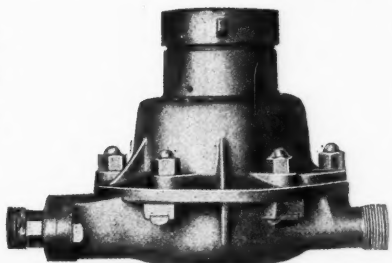
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PROPOSALS

SEWAGE CLARIFICATION TANK AND
SLUDGE DRYING BED

Winchester, Ky.
Sealed proposals addressed to S. B. Tracy, City Clerk of the City of Winchester, Ky., and endorsed on the envelope: "Proposals for Sewage Clarification Tank and Sludge Drying Bed," will be received until 7:30 P. M., July 7, 1911.

For making all excavations, back filling and grading, furnishing all materials and constructing complete a sewage clarification tank and sludge drying bed in accordance with the plans and specifications prepared by Chas. E. Collins, Consulting Engineer, Philadelphia, Pa., and now on file in the office of S. H. Rutledge, City Engineer.

Proposals shall be made upon blank forms to be obtained from the City Engineer. No proposal will be considered unless made upon the blank forms above mentioned, and unless accompanied by a certified check for the sum of Five hundred dollars on a national bank and payable to J. H. Hughes, Mayor.

The proposals will be opened publicly by the City Council at a regular meeting held in the Council Chamber, at 7:30 P. M., Friday, July 7, 1911.

The City Council reserves the right to reject any or all bids.

J. H. HUGHES, Mayor.

S. B. TRACY, City Clerk.

H. B. SCRIVENER, Chairman,
DR. M. S. BROWNE,
J. T. STOKELY,
Sewer Committee.

POLICE SIGNALLING SYSTEM, FIRE
ALARM SYSTEM AND UNDER-
GROUND CONSTRUCTION.

Passaic, N. J.
By direction of the City Council proposals will be received by the City of Passaic from contractors for furnishing and installing a Police Signalling System, a Fire Alarm System and Underground Construction for the City of Passaic, in accordance with the general conditions, specifications and drawings on file in the office of the City Clerk, from whom blank proposal forms may be obtained.

Proposals will be received for

- (1) Police Signalling System.
- (2) Fire Alarm System.
- (3) Underground Construction.
- (4) General Proposal including Police Signalling System, Fire Alarm System and Underground Construction.

All proposals must be accompanied by a surety bond or a certified check payable to the City of Passaic in a sum equal to at least 2 per cent. of the amount of the bid.

The successful bidder will be required to give a surety bond in a responsible surety company for the full amount of the contract for the faithful performance of the contract and for indemnity against suits or claims for infringement of patents and as security that he will guarantee all workmanship and materials for a period of five years.

Every bidder must furnish satisfactory evidence of his experience and equipment, together with list of similar systems installed.

All bidders must state number of working days required to complete work, and damages of ten dollars per day will be stipulated in the contract for every day's delay over the time agreed upon for the completion of the work.

Bidders will be required to submit samples of the following apparatus and set up same to simulate service conditions at

PROPOSALS

Fire Headquarters when directed by the Committee. Failure to comply with this requirement will disqualify bidder.

- One automatic time and date stamp.
- One take-up reel.
- One central station flash-light equipment.
- One police box.
- One flash-light.
- One flash-light controller.
- One fire alarm box.

All bids must be enclosed in a sealed envelope bearing the name and address of the bidder and endorsed on the outside, "Proposal for (followed by the title of that portion of the work or the entire work as given above)" and must be delivered to the City Clerk or his deputy on or before the 12th day of July, 1911. No bid will be received after 8.00 p. m.

The City of Passaic reserves the right to reject any or all bids.

M. B. MATTHEWS,
Chairman Committee on Public Safety.
THOMAS R. WATSON,
City Clerk. (28-5)

BRIDGE

Fitchburg, Mass.

Sealed proposals, addressed to the Board of Street Commissioners of the City of Fitchburg, Mass., and endorsed "Proposals for the Construction of the Fifth Street Viaduct," will be received by the said Board of Street Commissioners at the office of the City Engineer, Clerk of the Board, Fitchburg, Mass., until 5 p. m., of Monday, the 17th day of July, 1911, and on that day, at 7.30 p. m., will be publicly opened and read. The entire work is to be let in one contract.

Each bidder must make a personal examination of the location of the site of the viaduct.

Each bid must be accompanied by a certified check for five thousand dollars (\$5,000), payable to the City of Fitchburg; said check to be returned to the bidder unless he fails to execute the contract, should it be awarded him.

A bond for twenty-five thousand dollars (\$25,000) will be required for the faithful performance of the contract, the surety to be a substantial surety company, satisfactory to the Board of Street Commissioners and authorized by law to do business in the State of Massachusetts.

Prices proposed must cover all the expenses incidental to the completion of the works in full conformity with the specifications and contract.

The engineer's estimates of the quantities of work to be done are as follows:

Earth excav., in foundations..	2,500 cu. yds.
Rock excav., in foundations..	85 cu. yds.
Cinder filling under sidewalks	190 cu. yds.
Gravel fill on r'dway of bridge	470 cu. yds.
Steel bars for concrete reinforcement	87.5 tons
Structural steel, erected in place	292.5 tons
Concrete 1:3:5 Class A.....	1,176 cu. yds.
Concrete 1:3:5 Class B.....	99 cu. yds.
Concrete 1:2½:4½ Class C..	988 cu. yds.
Concrete 1:2½:4½ Class D..	315 cu. yds.
Concrete 1:2½:4 Class E.....	1,566 cu. yds.
Concrete 1:2½:4 Class F.....	88 cu. yds.
Hand rails, erected, complete.	1,378 lin. ft.
Scrubbing concrete surfaces.	1,500 sq. ft.
Painting concrete surfaces.	15,000 sq. ft.
Storm water inlets and drain pipes	2
Electric conduits	1,378 duct ft.
Lamp posts, single lights....	8
Lamp posts, cluster lights....	6
Electric wiring	

These quantities are approximate only, and the City of Fitchburg expressly reserves the right of increasing or diminishing the same as may be deemed necessary by its engineer.

Plans may be seen and specifications and forms of proposals obtained at the office of Timothy J. Sheehan, City Engineer, Fitchburg, Mass., and at the office of James H.

PROPOSALS

Fuertes, Consulting Engineer, 140 Nassau Street, New York City, upon making a deposit of twenty-five dollars (\$25). This deposit will be given back to the bidder upon the return of the plans and specifications in good condition.

Duplicate bids must be filed at the office of the City Auditor, Frank D. Page.

The Board of Street Commissioners reserves the right to reject any or all bids should they deem it to be for the interest of the City of Fitchburg to do so.

T. J. SHEEHAN, Clerk.
(28, 5, 17)

REINFORCED CONCRETE RESERVOIR
Americus, Ga.

Sealed proposals will be received by the Mayor and City Council of Americus, Georgia, until July 17, 1911, for the construction of a reinforced concrete reservoir, sixty feet in diameter by thirteen feet in depth. Plans and specifications on file at the office of the City Engineer. No bid will be considered unless accompanied with certified check for five per cent of the bid as evidence of good faith. The right is reserved to reject any or all bids.

T. N. HAWKES,
Clerk and Treasurer.
J. B. ANSLEY,
City Engineer. (26-5-12)

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Salesmen.

Must have experience in selling contractors and dealers, are required to go any place in the country where business develops. Good salary to the right parties. In answering this ad. state age, where now employed or where formerly employed and reason for quitting or wanting to quit; experience, if any, in selling or using dump wagons; salary expected; when can go to work. If know any one to whom can now sell dump wagons, give names. Give three references and state if you can give bond, personal or otherwise. Don't expect reply from us unless your answer to this is complete and your record will show you a successful salesman.

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Buff "Precise" Transit, No. 1B, level and arc	\$190.00
Light Mt. Gurley Transit, level and arc.....	125.00
Gurley Surveyor's Transit, level bubble.....	95.00
Keuffel & Esser, first quality, Engineer's plain Transit, No. 1 size.....	110.00
Keuffel & Esser, first quality, Engineer's plain Transit, No. 2 size.....	105.00
Krodel Engineer's plain Transit.....	75.00
Young & Son Engineer's plain Transit.....	110.00
Gurley Engineer's Transit, level bubble.....	125.00
Keuffel & Esser, Engineer's 15" Wye Level	60.00
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Some engineers have adopted the broad policy of using Tarvia in all new macadam construction. Many road authorities go still further and aim to treat all the old macadam roadways with Tarvia to preserve them against the destructive effect of automobile traffic and prevent dust.

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Kansas City, Mo.

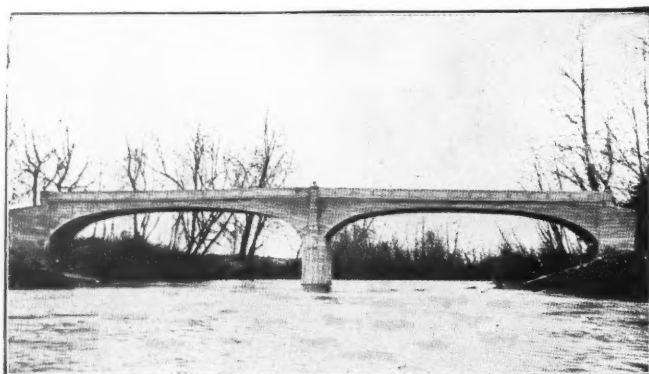
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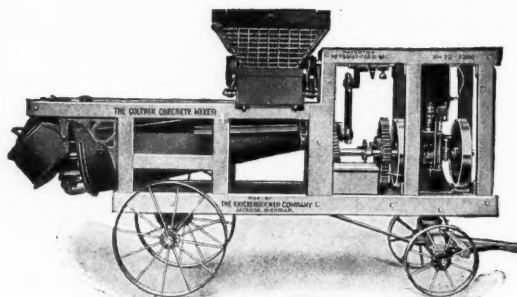
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Yours truly,

(Signed) WALTON W. GILMORE.



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The Coltrin Concrete Mixer for all Concrete Work

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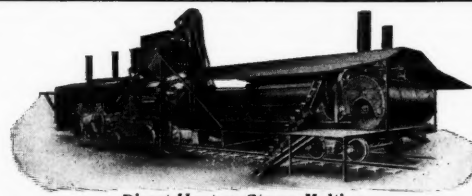
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Can be sprayed from an ordinary watering cart

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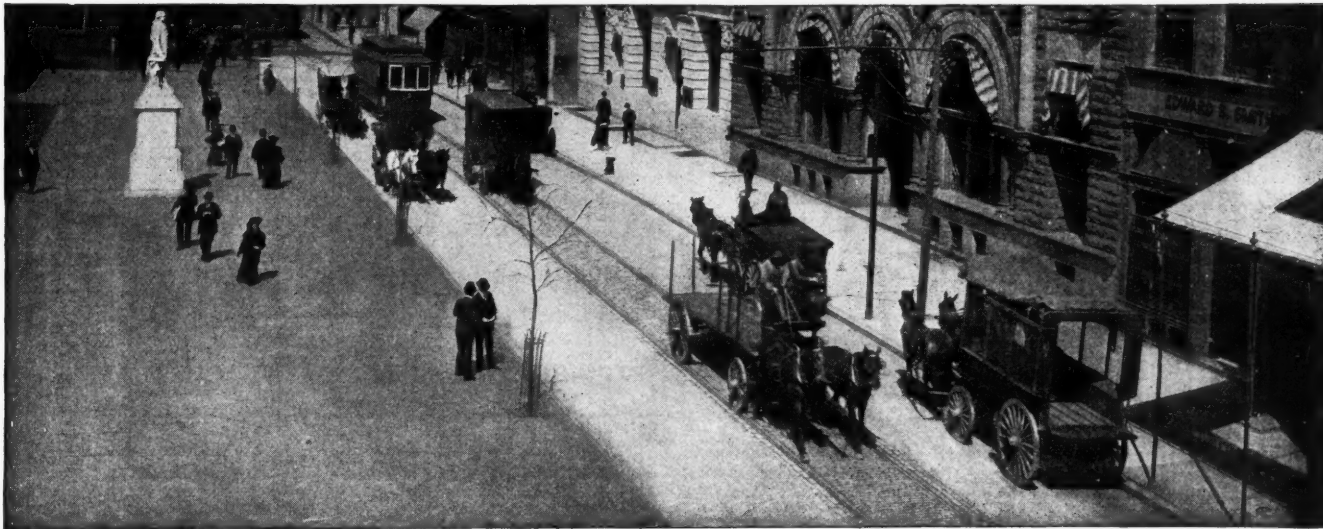
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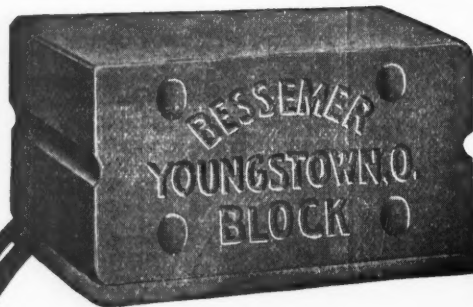
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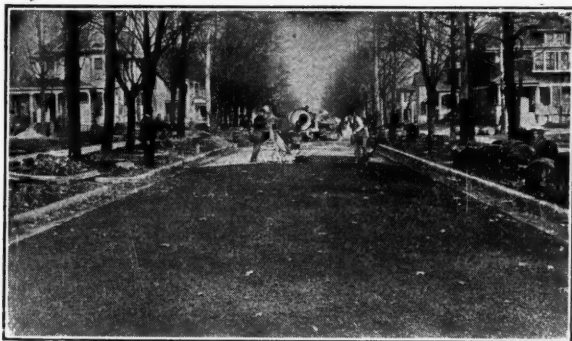
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Never Slippery—Excellent Foothold—Easy Traction—Simple to Repair.

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One for bituminous pavements, wooden blocks, brick, etc. (two and one-half million square yards treated with this material in Berlin, Germany, last year). The other for macadam and gravel roads.

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SEVEN



REASONS WHY

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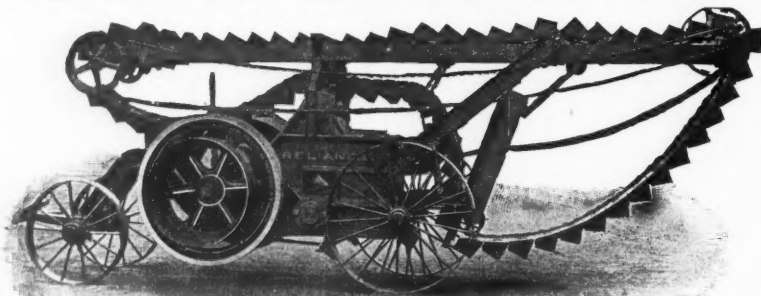
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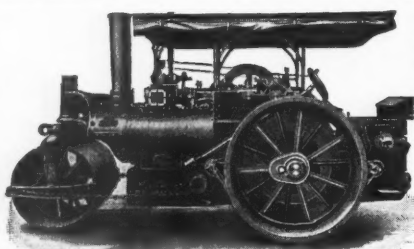
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Will REDUCE the COST of road construction and repairs

**SIMPLE
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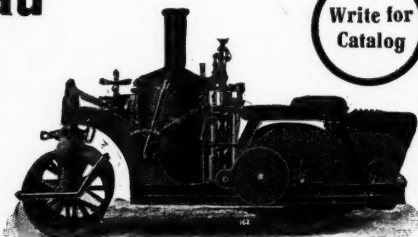


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Buffalo Pitts Double-Drive Tandem Roller

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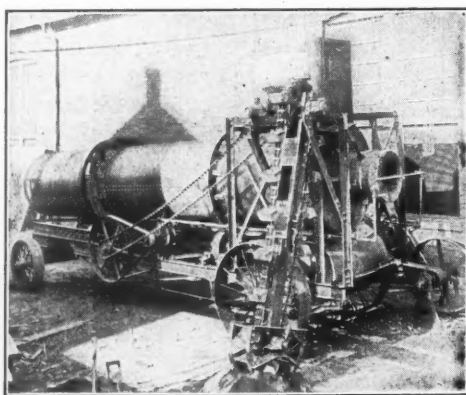
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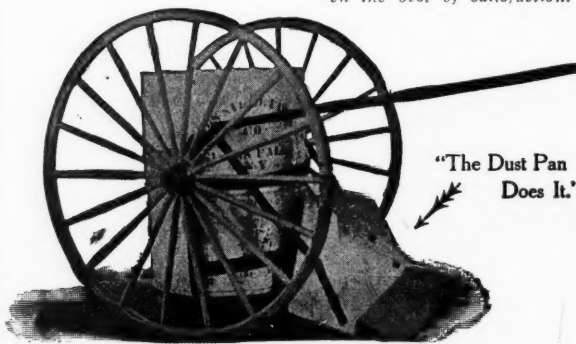
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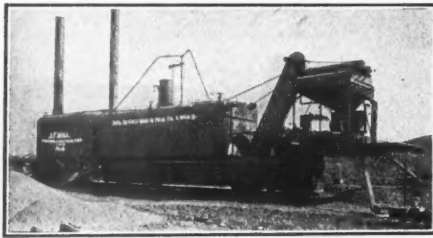
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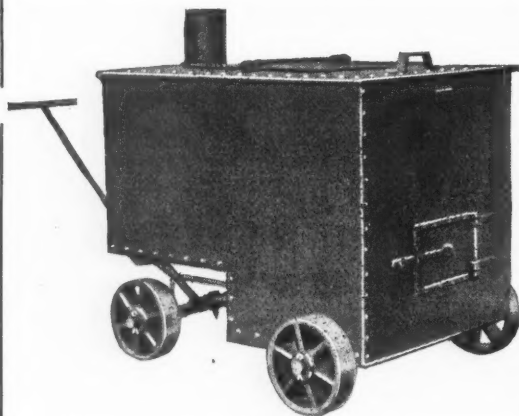
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that replaces the Sprinkler, Sweeper and Scraper, and
cleans a street as a rubber squeegee does a window.



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The Climax Crusher, Mounted, with Elevator, Screen and Mounted Bin.

Catalogue is free.

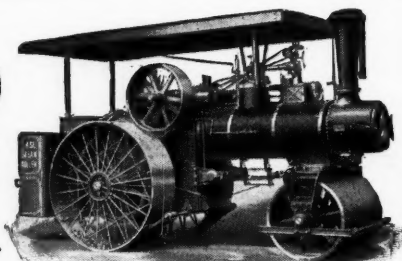
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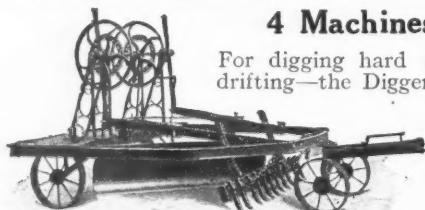


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4 Machines In 1



For digging hard surfaces and drifting—the Digger is attached.

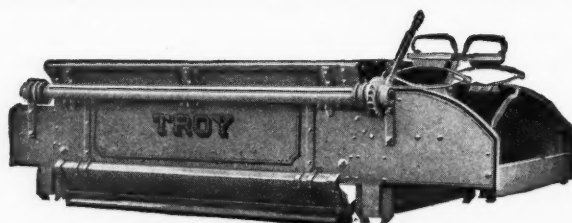
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Arranged for Digging Hard Surfaces and Grading

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180,000 Minutes in a Year—How Many can You Save with this Box?



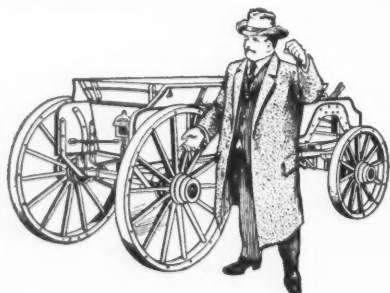
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Macadam

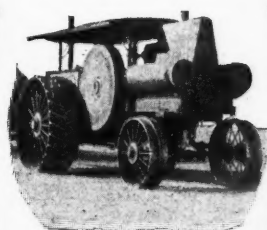
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HAULING ENGINE**

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20-30-45-70 Horsepower

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Keeps
Alignment
Cannot Rust
Outlasts Tile
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Expansion Cast Iron
ROAD CULVERT

Excels in points of construction, strength and economy.

Made in 3 foot sectional lengths, lock together readily and securely, no bolts, no rivets, no adjustments. Furnished in diameter of 8" to 60".

Will sustain weight of 15 tons as near to the surface of the road as 8 inches.

Owing to the thickness of the metal it gives approximately fifty years of service.

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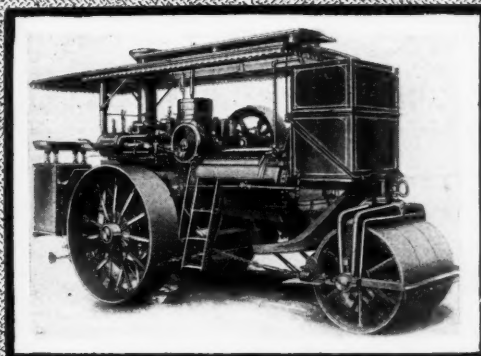
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Sections are so made that they can be laid rapidly by one man. Shipped knocked down—gets lowest freight rate.

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Road Roller—Hauling Engine**

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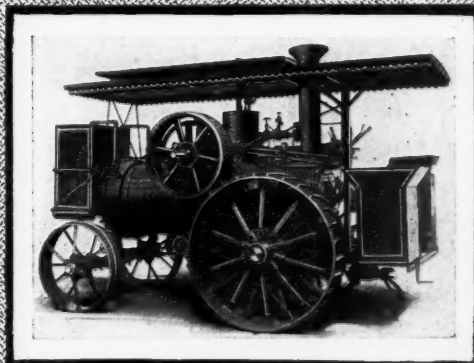
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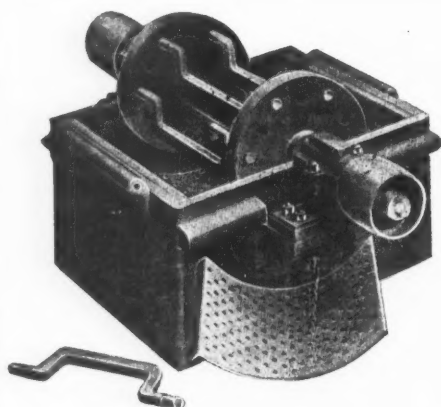


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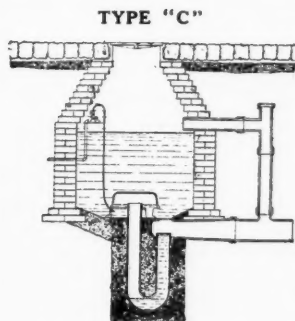
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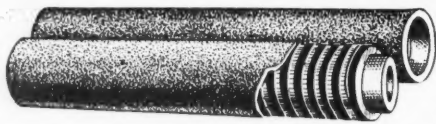
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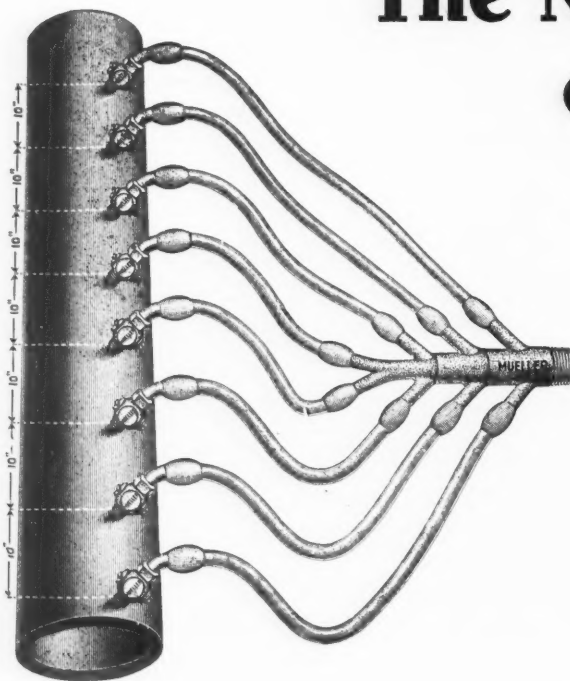
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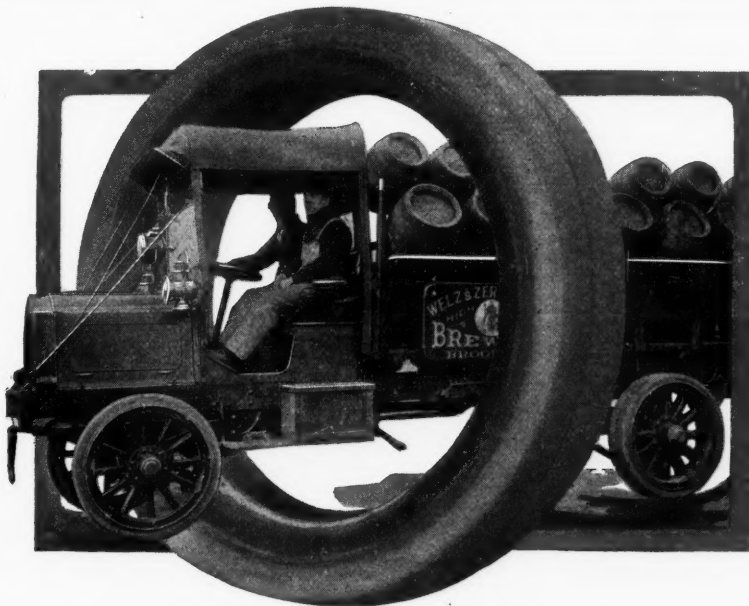
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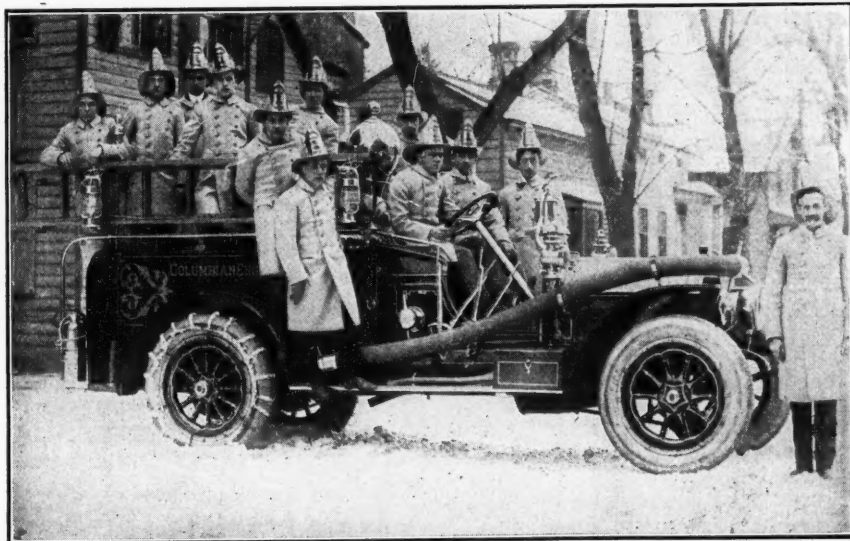
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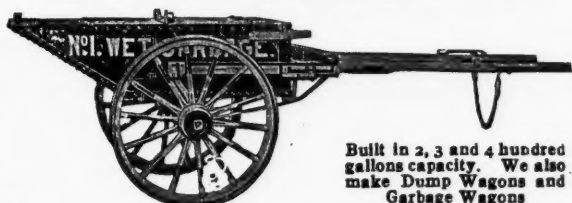
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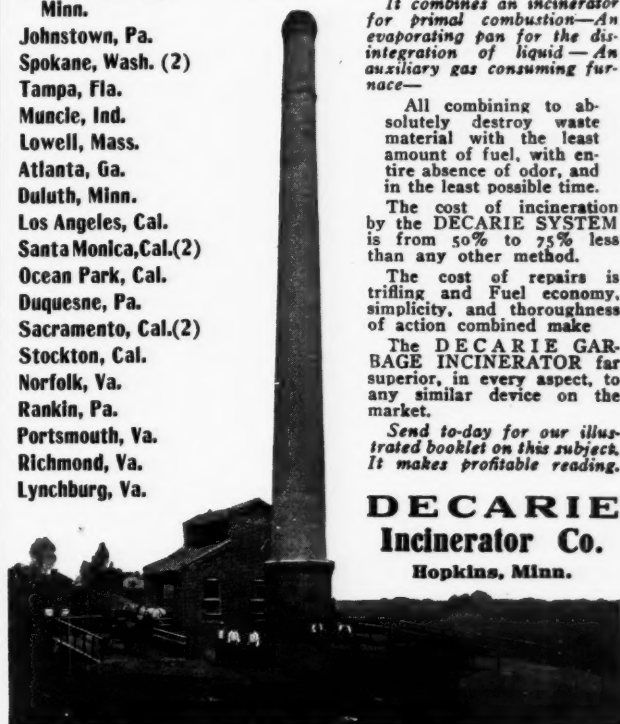
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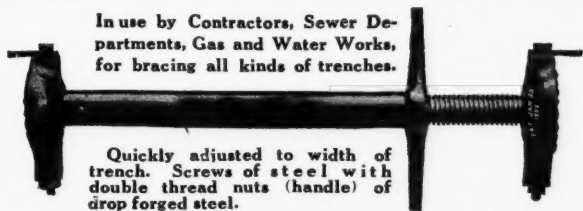
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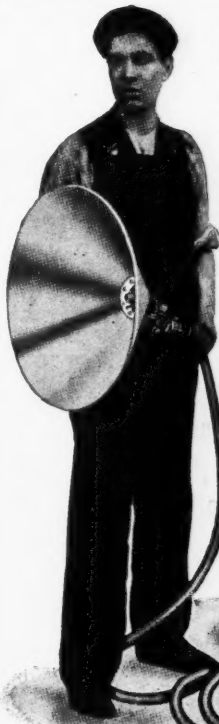
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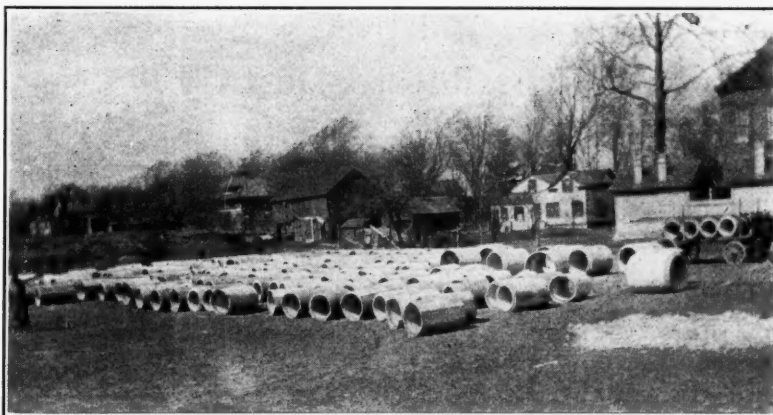
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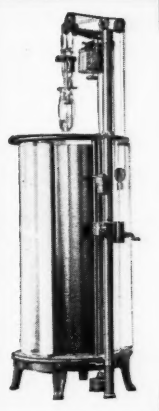
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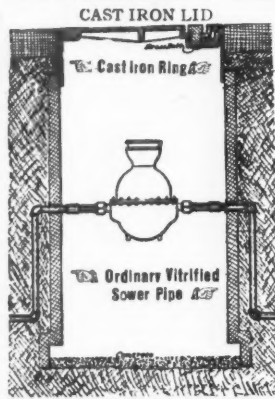
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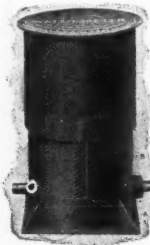


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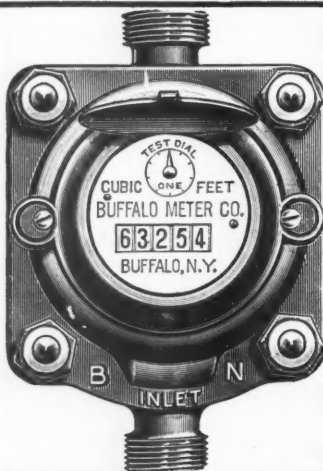
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